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ANALYSIS OF THE ROMANIAN BEEF MARKET

IRINA-ADRIANA CHIURCIU ¹, ELENA COFAS ²

Abstract

The paper presents the existing situation on the beef market in Romania, compared to the situation encountered in the European Union and implicitly the position that our country occupies in this regard. The study was conducted for the period 2015-2020 and reflects the fact that Romania is not among the main cattle breeders and beef producers in the European Union. Moreover, there were registered decreases for the analyzed period for most of the indicators studied: for the number of cattle the decrease was 8.67%, slaughtered cattle - 36.64%, beef production - 27.61%, and in the category of cattle meat value exports - over 30%. Indicators for which increases in values were observed: average purchase prices for live animals, for most Development Regions, and imports of fresh or chilled beef.

Keywords: beef production, bovine effectives, bovines slaughtered, exports, imports

JEL classification: Q10

INTRODUCTION

It is known that cattle breeding is a traditional activity of Romanian farmers, especially for those in the hilly and mountainous areas, where there are large areas of pastures.

According to experts, this activity is appreciated due to the variety of products obtained, the low energy consumption and the diversity of feed used in animal feed, including part of the resulting secondary production in the vegetable sector.

Another benefit brought by cattle breeding is the guarantee of stability for labor force in the areas where it is practiced, areas where there are human resources available (MADR, 2021).

Through NRDP 2014-2020, cattle breeding benefited from non-reimbursable funds due to the support provided to the livestock sector, for the establishment or modernization of farms, endowment with equipment and installations, primary production, conditioning and marketing, etc. Also, for a better distribution of funds at national level, there were special sessions for the submission of projects in the mountain area (AFIR, 2021).

The investments amounted to over 119 million Euros, granted for 150 livestock farms for beef cattle and were accessed through sub-measures 4.1 «Investments in agricultural holdings», 6.1 «Support for the installation of young farmers» and 6.3 «Support for the development of small farms». Most of the funding was within sub-measure 4.1 - 96 projects with a value of over 117 million Euros. In addition, funds were also provided for mixed farms - vegetable and livestock, beekeeping, as well as for other categories of animals, in total the livestock sector benefiting from 606 million Euros. (Industria cărnii/ Meet industry, 2021).

In this favorable context for the development of the livestock sector in general, the paper aims to present the existing situation on the Romanian beef market.

MATERIALS AND METHODS

In order to better outline the existing situation on the Romanian beef market, a series of indicators were analyzed, such as: the number of live and slaughtered cattle, the production of beef, in the EU and Romania; average annual consumption per inhabitant of beef, in Romania; average purchase prices for live cattle, by country and by Development Regions; value imports and exports

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of beef in Romania. The period under review was 2015-2020. In the paper the statistical data were processed using index, share and comparison methods.

The information that led to the current study was taken from the official websites of statistical institutions, such as: Eurostat, NIS and ITC. At the same time, a variety of specialized materials were consulted.

RESULTS AND DISSCUSION

In addition to the unique taste, consumers' preference for beef is based on scientific studies, which show that it is rich in protein (18-20%), minerals and vitamins, especially type B. Beef has an average energy value of about 2,000 kcal / kg. Another advantage is that it is low in saturated fat and cholesterol compared to other types of meat (Acatincăi, 2004; Cofas and Soare, 2013; Soare and others, 2012).

According to the information published by Ziarul Financiar, Romania holds 0.2% of the world's livestock, respectively 2% of the EU's livestock. While worldwide there are 62.7 cattle heads per 100 ha, in the EU 48.8 cattle heads / 100 ha, in Romania there are only 22.2 cattle heads / 100 ha (Nițu, 2020).

Table 1 shows the evolution of bovine effectives in the period 2015-2020 in the European Union and we can see a decrease of 14.2% between the values recorded for 2020 compared to 2015. The main cattle breeders in 2020 were France, with 17,789.25 thousand heads, Germany - 11,301.86 thousand heads and Spain - 6,636.43 thousand heads.

Table 1. The evolution of live bovine effectives in the European Union (thousand heads)

| Specification | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2015 % |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-------------|
| European Union - 28 - 28 countries (2015-2019) - 27 countries (from 2020) | 89,118.79 | 89,503.54 | 88,796.94 | 87,450.10 | 86,620.16 | 76,462.18 | 85.80 |
| Belgium | 2,503.26 | 2,501.35 | 2,385.99 | 2,398.09 | 2,373.10 | 2,335.44 | 93.30 |
| Bulgaria | 561.04 | 570.14 | 552.92 | 542.12 | 527.19 | 588.91 | 104.97 |
| Czechia | 1,366.33 | 1,339.60 | 1,366.36 | 1,365.24 | 1,367.05 | 1,340.04 | 98.08 |
| Denmark | 1,566.00 | 1,554.00 | 1,558.00 | 1,530.00 | 1,500.00 | 1,500.00 | 95.79 |
| Germany | 12,635.46 | 12,466.59 | 12,281.20 | 11,949.09 | 11,639.53 | 11,301.86 | 89.45 |
| Estonia | 256.20 | 248.20 | 250.90 | 251.90 | 254.00 | 253.30 | 98.87 |
| Ireland | 6,422.23 | 6,613.43 | 6,673.59 | 6,593.49 | 6,559.65 | 6,529.44 | 101.67 |
| Greece | 582.00 | 554.00 | 556.00 | 542.00 | 530.00 | 539.00 | 92.61 |
| Spain | 6,182.91 | 6,317.64 | 6,465.75 | 6,510.59 | 6,600.33 | 6,636.43 | 107.34 |
| France | 19,386.52 | 19,373.38 | 18,953.58 | 18,613.04 | 18,172.97 | 17,789.25 | 91.76 |
| Croatia | 441.00 | 444.00 | 451.00 | 414.00 | 420.00 | 423.00 | 95.92 |
| Italy | 6,155.81 | 6,314.89 | 6,349.81 | 6,311.16 | 6,377.23 | 6,400.04 | 103.97 |
| Cyprus | 58.86 | 63.14 | 67.03 | 70.82 | 73.97 | 77.50 | 131.67 |
| Latvia | 419.08 | 412.31 | 405.82 | 395.33 | 395.32 | 398.99 | 95.21 |
| Lithuania | 722.60 | 694.80 | 676.90 | 653.50 | 634.60 | 629.50 | 87.12 |
| Luxembourg | 200.64 | 202.41 | 198.07 | 194.39 | 192.10 | 190.69 | 95.04 |
| Hungary | 821.00 | 852.00 | 870.00 | 885.00 | 909.00 | 933.00 | 113.64 |
| Malta | 15.02 | 14.36 | 14.18 | 14.12 | 14.00 | 14.01 | 93.28 |
| Netherlands | 4,315.00 | 4,294.00 | 4,030.00 | 3,690.00 | 3,721.00 | 3,691.00 | 85.54 |
| Austria | 1,957.61 | 1,954.39 | 1,943.48 | 1,912.81 | 1,879.52 | 1,855.43 | 94.78 |
| Poland | 5,762.50 | 5,970.20 | 6,035.70 | 6,183.30 | 6,261.60 | 6,278.90 | 108.96 |
| Portugal | 1,605.86 | 1,635.01 | 1,670.02 | 1,632.42 | 1,674.97 | 1,691.32 | 105.32 |
| Romania | 2,092.40 | 2,049.70 | 2,011.10 | 1,977.20 | 1,923.30 | 1,910.90 | 91.33 |
| Slovenia | 484.19 | 488.60 | 479.61 | 476.81 | 483.07 | 485.61 | 100.29 |
| Slovakia | 457.46 | 446.11 | 439.83 | 438.86 | 432.25 | 442.29 | 96.68 |
| Finland | 903.41 | 887.25 | 874.52 | 859.38 | 840.74 | 835.38 | 92.47 |
| Sweden | 1,428.40 | 1,436.05 | 1,448.59 | 1,435.45 | 1,404.67 | 1,390.96 | 97.38 |
| United Kingdom | 9,816.00 | 9,806.00 | 9,787.00 | 9,610.00 | 9,459.00 | - | - |

Source: Eurostat, 2021; own calculations

Romania is far from the first ranked countries, with a herd of 1,910.90 thousand heads in 2020, registering a significant decrease of 8.67%, compared to 2015. These values have placed our country on the 9th place in the top of cattle breeders in the European Union.

Another important indicator which directly influences the bovine meat market is the bovines slaughtered in abattoirs. The evolution of bovine effectives slaughtered in the period 2015-2020 in European Union is presented in Table 2.

In 2020 compared to 2015, in the European Union is a decrease of slaughtered cattle in slaughterhouses. This decrease was of 10.9%.

The decrease in the number of bovines slaughtered in abattoirs in the European Union is due, on the one hand to the decrease in bovine effectives, and on the other hand, to adverse weather conditions, especially drought, which has manifested in recent years.

The states with the most cattle slaughtered in 2020 were: France - 4,486.48 thousand heads, Germany - 3,263.00 thousand heads and Italy - 2,694.34 thousand heads.

Table 2. The evolution of bovines slaughtered in the European Union (thousand heads)

| Specification | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2015 |
|----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | | | | | | | % |
| European Union - 28 | 25,716.90 | 26,565.79 | 26,464.42 | 26,742.35 | 26,239.49 | 22,912.58 | 89.10 |
| - 28 countries (2013-2019) | | | | | | | |
| - 27 countries (from 2020) | | | | | | | |
| Belgium | 872.55 | 911.37 | 920.14 | 888.10 | 837.89 | 782.65 | 89.70 |
| Bulgaria | 25.18 | 0.00 | 35.07 | 34.23 | 26.65 | 30.35 | 120.53 |
| Czechia | 231.20 | 241.79 | 227.43 | 236.57 | 238.83 | 234.53 | 101.44 |
| Denmark | 460.70 | 495.80 | 467.00 | 490.50 | 464.20 | 448.10 | 97.27 |
| Germany | 3,519.00 | 3,607.00 | 3,505.00 | 3,416.00 | 3,387.00 | 3,263.00 | 92.73 |
| Estonia | 38.90 | 37.62 | 35.23 | 34.95 | 34.27 | 35.15 | 90.36 |
| Ireland | 1,664.87 | 1,744.19 | 1,851.56 | 1,896.04 | 1,852.51 | 1,881.89 | 113.04 |
| Greece | 174.75 | 167.46 | 181.25 | 166.16 | 144.34 | 144.48 | 82.68 |
| Spain | 2,333.90 | 2,373.85 | 2,391.00 | 2,462.56 | 2,510.77 | 2,422.41 | 103.79 |
| France | 4,664.98 | 4,679.41 | 4,625.61 | 4,625.96 | 4,545.97 | 4,486.48 | 96.17 |
| Croatia | 182.40 | 190.20 | 182.60 | 180.40 | 183.20 | 169.65 | 93.01 |
| Italy | 2,711.67 | 2,845.55 | 2,651.40 | 2,768.19 | 2,729.60 | 2,694.34 | 99.36 |
| Cyprus | 14.93 | 16.34 | 16.58 | 16.86 | 17.25 | 15.32 | 102.61 |
| Latvia | 86.38 | 87.83 | 80.30 | 76.08 | 70.09 | 67.00 | 77.56 |
| Lithuania | 175.74 | 166.76 | 155.83 | 154.50 | 156.96 | 149.68 | 85.17 |
| Luxembourg | 24.69 | 25.61 | 44677 | 26.85 | 27.95 | 27.67 | 112.07 |
| Hungary | 102.50 | 108.34 | 105.61 | 112.08 | 112.08 | 105.70 | 103.12 |
| Malta | 27820 | 42461 | 44808 | 34394 | 25628 | 44838 | 109.04 |
| Netherlands | 1,956.89 | 2,096.46 | 2,157.96 | 2,242.75 | 2,123.27 | 2,088.56 | 106.73 |
| Austria | 695.17 | 686.53 | 678.26 | 694.23 | 680.53 | 644.65 | 92.73 |
| Poland | 1,676.80 | 1,779.13 | 1,931.16 | 1,942.40 | 1,853.90 | 1,851.22 | 110.40 |
| Portugal | 363.18 | 379.60 | 377.12 | 383.67 | 369.26 | 393.31 | 108.30 |
| Romania | 208.18 | 269.23 | 274.88 | 233.14 | 196.04 | 131.91 | 63.36 |
| Slovenia | 112.04 | 116.95 | 120.12 | 115.76 | 116.30 | 118.12 | 105.43 |
| Slovakia | 31.32 | 31.37 | 29.27 | 30.44 | 28.74 | 26.20 | 83.65 |
| Finland | 278.96 | 280.93 | 274.29 | 274.75 | 269.27 | 261.69 | 93.81 |
| Sweden | 466.72 | 411.02 | 406.03 | 425.63 | 432.77 | 434.45 | 93.09 |
| United Kingdom | 2,639.56 | 2,779.88 | 2,753.61 | 2,809.62 | 2,826.18 | - | - |

Source: Eurostat, 2021; own calculations

In this category, Romania ranked 18th in the year 2020, with 131.91 thousand heads, decreasing by 36.64% compared to 2015. Cattle slaughtered in the same year accounted for 6.90% of the country's bovine effectives.

It should be mentioned that the largest number of slaughtered heads, 274.88thousand, was registered in 2017.

In Table 3 is presented the evolution of slaughtered bovine meat in the producing countries from the European Union. From the data presented, it easily stands that on top of the ranking of beef producing countries are: France, Germany and Italy.

In the European Union in the period 2015-2020 is observed that the production of slaughtered meat varied from year to year. The lowest value was recorded in 2020 (6,822.30 thousand tons) and the highest in 2018 (7,931.69 thousand tons). The decrease in 2020 was of 10.06%.

Table 3. The evolution of beef production in the European Union (thousand tons)

| Specification | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2015 % |
|--|----------|----------|----------|----------|----------|----------|-------------|
| European Union - 28 countries (2013-2019) - 27 countries (from 2020) | 7,585.17 | 7,800.02 | 7,802.83 | 7,931.69 | 7,822.38 | 6,822.30 | 89.94 |
| Belgium | 267.88 | 278.36 | 281.54 | 277.31 | 263.75 | 254.51 | 95.01 |
| Bulgaria | 5.29 | 6.66 | 7.44 | 7.22 | 5.48 | 6.24 | 117.96 |
| Czechia | 68.29 | 71.93 | 67.72 | 71.58 | 72.89 | 72.52 | 106.19 |
| Denmark | 120.60 | 129.40 | 124.00 | 129.20 | 124.60 | 121.20 | 100.50 |
| Germany | 1,124.00 | 1,148.00 | 1,124.00 | 1,102.00 | 1,106.00 | 1,090.00 | 96.98 |
| Estonia | 9.62 | 9.43 | 9.00 | 8.56 | 8.57 | 8.89 | 92.41 |
| Ireland | 564.14 | 588.36 | 617.02 | 622.54 | 619.80 | 633.38 | 112.27 |
| Greece | 41.92 | 40.17 | 44.11 | 39.63 | 33.46 | 34.73 | 82.85 |
| Spain | 626.10 | 637.01 | 643.86 | 669.01 | 695.17 | 677.74 | 108.25 |
| France | 1,452.77 | 1,464.15 | 1,442.18 | 1,460.00 | 1,428.46 | 1,434.59 | 98.75 |
| Croatia | 42.26 | 44.43 | 42.20 | 43.78 | 45.43 | 43.37 | 102.63 |
| Italy | 788.28 | 809.66 | 756.42 | 809.22 | 779.82 | 732.28 | 92.90 |
| Cyprus | 5.74 | 7.04 | 8.31 | 5.28 | 5.61 | 4.64 | 80.84 |
| Latvia | 17.36 | 17.70 | 16.75 | 15.87 | 14.78 | 14.52 | 83.64 |
| Lithuania | 44.13 | 42.29 | 40.88 | 40.28 | 42.46 | 41.73 | 94.56 |
| Luxembourg | 9.08 | 9.42 | 9.54 | 9.87 | 10.17 | 10.25 | 112.89 |
| Hungary | 26.39 | 28.07 | 27.21 | 29.15 | 29.73 | 28.07 | 106.37 |
| Malta | 1.03 | 1.15 | 1.12 | 1.07 | 1.03 | 1.14 | 110.68 |
| Netherlands | 382.52 | 416.06 | 438.87 | 459.21 | 424.30 | 432.84 | 113.15 |
| Austria | 228.75 | 227.44 | 226.09 | 233.46 | 229.61 | 218.36 | 95.46 |
| Poland | 471.01 | 501.46 | 558.58 | 564.72 | 560.45 | 559.38 | 118.76 |
| Portugal | 88.62 | 91.10 | 91.09 | 93.79 | 92.03 | 97.78 | 110.34 |
| Romania | 44.47 | 57.53 | 59.14 | 49.92 | 43.54 | 32.19 | 72.39 |
| Slovenia | 33.58 | 35.66 | 35.79 | 34.87 | 35.74 | 36.50 | 108.70 |
| Slovakia | 8.40 | 8.29 | 7.79 | 8.11 | 8.27 | 7.93 | 94.40 |
| Finland | 85.76 | 86.37 | 85.39 | 86.48 | 87.18 | 86.53 | 100.90 |
| Sweden | 143.98 | 131.25 | 132.07 | 136.87 | 139.67 | 141.00 | 97.93 |
| United Kingdom | 883.21 | 911.66 | 904.73 | 922.70 | 914.39 | - | - |

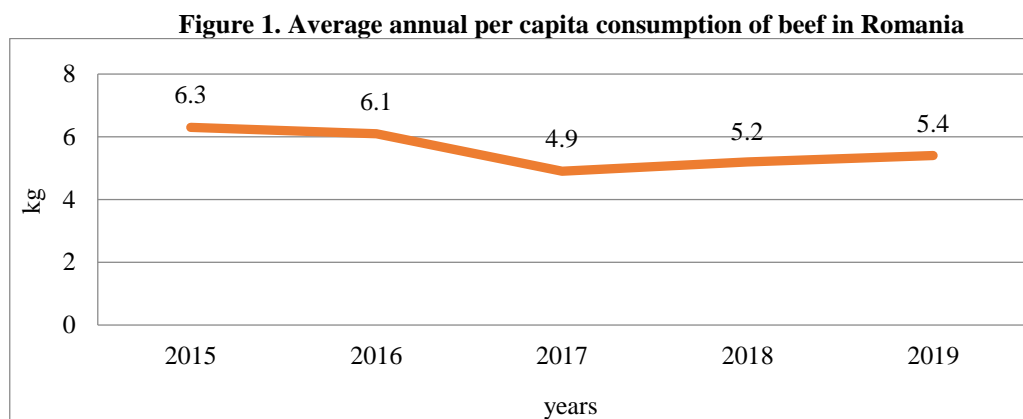
Source: Eurostat, 2021; own calculations

For Romania, the situation was as follows: the highest beef production was obtained in 2017 - 59.14 thousand tons, and the lowest in 2020, 32.19 thousand tons. This value represented a decrease of 27.61% compared to 2015 and placed Romania on the 19th place in the European Union in terms of beef production.

Currently, meat consumption per capita is an indicator for measuring sustainable development at the local level in the European Union (Indicatorii dezvoltării durabile, 2021).

In the European Union beef consumption per capita is different from country to country. According to official statistics, these countries consume a larger amount of beef per inhabitant compared to the European average: France; Denmark; Sweden; Italy, Ireland; Netherlands; Belgium; Austria and Finland (Agri benchmark, 2021)

Regarding the average annual consumption per inhabitant of beef, in Romania (Figure 1), the decrease was 14.29%, ie from 6.3 kg in 2015 to 5.4 kg in 2019.



Source: NIS, 2021

Average purchase prices for live cattles, by Development Regions, increased in most Regions during the period under review, with the exception of the Western Region, where the decrease was of 26.83% (Table 4).

Table 4. Average purchase prices for live cattles, by Development Regions (lei / kg live)

| Specification | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2015 % |
|---------------------------|------|------|------|------|------|------|-------------|
| North-West Region | 6.28 | 6.42 | 6.14 | 6.79 | 7.28 | 7.56 | 120.38 |
| Center Region | 6.85 | 6.3 | 6.47 | 7.4 | 7.52 | 8.2 | 119.71 |
| North-East Region | 5.5 | 4.87 | 7.28 | 7.53 | 8.43 | 8.51 | 154.73 |
| South-East Region | 5.1 | 4.08 | 4.68 | 5.65 | 6.09 | 6.33 | 124.12 |
| South - Muntenia Region | 5.36 | 4.87 | 5.34 | 6.35 | 6.62 | 6.83 | 127.43 |
| South-West Oltenia Region | 5.39 | 5.47 | 5.22 | 6.22 | 5.63 | 8.02 | 148.79 |
| West Region | 5.33 | 3.9 | 3.9 | 3.9 | 3.9 | 3.9 | 73.17 |

Source: NIS, 2021; own calculations

The largest increase in prices was noted for the North-East Region, of 54.73%. Also here was registered the highest average purchase price, in 2020, of 8.51 lei / kg live. The lowest price was in the West Region, of 3.9 lei.

Tables 5 and 6 show the situation of value imports and exports of beef, in 2 categories *Fresh or chilled* and *Frozen*. The data provided by ITC show that Romania does not enter the top 50 importers or exporters of beef.

Domestic beef production was supplemented by imports. Their value in the category *Fresh or chilled* (Table 5) increased in the period 2016-2020 by 113.95%, while the value of imports for beef *Frozen* decreased by 36.25%.

Table 5. Value imports of beef for Romania (US Dollar thousand)

| Specification | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2016 % |
|------------------|--------|--------|--------|--------|--------|-------------|
| Fresh or chilled | 12,471 | 25,012 | 29,150 | 26,198 | 26,682 | 213.95 |
| Frozen | 64,067 | 28,133 | 38,630 | 41,280 | 40,842 | 63.75 |

Source: ITC, 2021; own calculations

In direct proportion to the decrease in beef production, value exports also decreased (Table 6) for both categories of beef. The largest decrease was registered for the category *Fresh or chilled*, of 37.36%.

Table 6. Value exports of beef for Romania (US Dollar thousand)

| Specification | 2016 | 2017 | 2018 | 2019 | 2020 | 2020/2016 % |
|------------------|--------|--------|--------|--------|--------|----------------|
| Fresh or chilled | 23,751 | 43,867 | 35,941 | 23,950 | 14,901 | 62.64 |
| Frozen | 5,262 | 3,555 | 3,135 | 2,808 | 3,331 | 63.30 |

Source: ITC, 2021; own calculations

It is necessary to specify that the increase of world meat production is closely correlated with the growth of the global population (Stanciu, 2014) and the evolution of the beef market is based on a number of factors, among which we mention: meat quality; prices of beef products; packaging and presentation of products; consumer income, marketing actions of producers, distributors and retailers, etc. (Chiran et al., 2002).

In order to obtain quality products that are to the liking of increasingly demanding consumers, the aim is to improve production technologies for animal feed and animal husbandry technologies.

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CONCLUSIONS

Following the research on beef market in Romania, resulted the following:

- bovine herds have achieved insignificant reductions in 2020 (8.67%) compared to 2015;
- the number of bovines slaughtered in abattoirs decreased in 2020 compared to 2015 with 36.64%;
- the production of beef in Romania, has reduced from 44.47 thousand tons (2015) to (32.19 thousand tons);
- The average annual consumption per inhabitant of beef in Romania has reduced from 6.3 kg (2015) to 85.4 kg (2019);
- In the North-East Region, the highest average purchase price for cattle meat in live weight was registered, in 2020, as well as the highest price increase, of 54.73% for the period 2015-2020;
- the valoric imports and exports for beef have fluctuated from year to year;
- in the analyzed period the value imports of beef were higher than the value exports.

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