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ROMANIAN BEEF & VEAL MEAT MARKET ANALYSIS

Case study

Keywords
Beef
Production
Consumption
Trade

JEL Classification
M21, L11

Abstract

Current nutritional trends, oriented towards a healthy nutrition, lead to the re-evaluation of the share held by beef in the diet of the population. The demand for beef and veal at European and global market level can represent a significant opportunity to increase domestic producers' business. Though cattle breeding is a traditional activity for the indigenous population from rural areas, livestock for slaughter have decreased steadily in the last years, thus the domestic market being dependent on imports. Romanian natural potential allows the achievement of sufficient production to meet domestic and export demand for beef, which brings high income for producers. The article proposes a review of the domestic production of beef and veal, their consumption and the origin of products on the domestic market in the European and international context.

Introduction

The availability of some types of food that are safe for consumption, in a sufficient quantity, at an accessible price and of superior quality represents a food safety issue, which should constitute a major concern for any country. Rational nutrition, based on scientific criteria, involves meeting the nutritional needs of the body by eating some types of food that are suitable from the point of view of quality and innocuousness. Due to the high content of available high quality proteins, a proportion of essential amino acids that is close to the human body's needs, the presence of vitamins and of some valuable mineral components, beef represents a type of food with high nutritional, biological and energy value. (Banu, 2009) The data regarding beef and veal chemical composition are presented in table 1. In trade, there are different types of beef, differentiated by origin and the animal's peculiarities, the way of carving and the quality standard, freshness and way of conservation/processing stage, etc. Veal can be eaten as such, after the necessary cooking, or can be destined to industrial processing. By means of advanced technology, beef can be used as raw material in order to obtain some iron-rich or creatine formulae and some substitution enzymes, thus ensuring good body growth and health maintenance. In the athlete nutrition domain the great majority of legal anabolic substances are extracted from beef.

According to the Agriculture Journal (2007), the meat market is made up of livestock, refrigerated and frozen meat, smoked meat, marinade, dried and brined meat, tallow, products that contain meat or offal with preservatives, processed or packaged meat. On a long term basis, the beef market registers an upward trend, influenced by the increasing demand from the part of the consumers. In a short term basis, some problems may occur, which can become manifest in beef marketing or production. Therefore, besides the atypical offer and demand oscillations, the beef market has been influenced by some old and new critical incidents. (bovine spongiform encephalopathy BSE, beef replaced by horse meat, the BLUETONGUE disease). The impact was only temporary, with a migration of consumers from one category to another for a short period of time. (Vaschi, 2014) The embargo imposed by Russia regarding beef coming from Romania can be another factor which will influence the local sector. At an European level, the measures taken in accordance with the Common Agricultural Policy (direct help systems, maintaining custom duties for meat imports) stabilize domestic production and consumption, favouring the meat community sector. (Ernst&Young, 2007)

Materials and methods

The data used in this article represent statistical information presented by specialized national, European or global institutions, information presented in the media, journals, food industry treatises/dissertations. Statistical surveys are open to all companies that have primary or secondary business: "Production and preserving of meat", class 1011, NACE Rev.2 classification. The observation unit is a farm, an enterprise or a local working point. These units are livestock slaughter houses. The slaughtering process is carried out for processing or marketing of meat. All data collected from FAO and National Institute of Statistics was rewritten into the tables. There have been used data series regarding livestock production, numbers of cattle slaughtered, dressed weights and average dressed carcase weight. The purpose of the statistics is to show changes in the size and value of the total production of animals.

Results and discussions

Meat production and processing global sector

The increase in population has directly influenced the development of the meat production and processing global sector, which has had to adapt to a rising demand. According to the Report drawn by The United States Department of Agriculture, quoted by Şerban (2014), the period 2008-2013 was characterised by a medium pace of growth as far as global meat production is concerned, of 1.6 – 1.7%. Thus, if in 2012 global meat production was of 252 million tons, in 2013 it already reached 256 tons, the forecast for 2014 being of 58.6 million tons. Spectacular increases were registered mainly in chicken and pork. The quantity of beef at a global level evolved from 57.5 million tons in 2012 to 58.5 million tons in 2013, the forecast for 2014 being of 58.6 million tons. The pace of growth in beef is close to the general sector, being supported by the global fodder's tendency to become cheaper and the substantial growth f imports from China and Hong Kong. According to the forecast made by OECD – FAO, quoted by Stoian (2014), in the next decade, global beef sector will continue to rise with an annual medium pace of growth of +1.7%, registering a slight fall as compared to the last decade. In the next decade, the main meat producers will be in Brazil, China and the USA. The data taken from the Food and Agriculture Policy Research Institute (2011) foresees that Brazilian beef production will increase with 46% in the next ten years. Beef global trade will increase at a more alert pace than consumption. The Mercosur countries will strengthen their position as leaders in the domain to the detriment of Oceania (Australia and, especially, New Zealand), which will lose market share. Brazil will remain the greater beef exporter, with a market share of 47% in global export. The OECD – FAO specialist forecast are

more pessimistic, a shrink being expected on a short term basis with approximately 6% because of the decrease in the number of cattle. Global beef exports will increase with only 1.7% per year, slightly less than the 4.4% registered in the last 10 years. The slower pace of growth is explained mainly because of the import demand reduction from the Russian Federation. The increase in meat demand form the part of South and North America will diminish the effects of the embargo imposed by Russia, the two regions covering 84% of the global export increase. (Kanerva, 2013, Meat Factory, 2013).

Meat consumption per capita represents an economic development degree indicator of the analysed region and the population welfare degree, being used in assessing food safety. For the great demographic concentrations, the food product global consumption image is complete only if it is correlated with the number of inhabitants (Table 3). China, the greatest meat consumer in the world, held, in 2012, a weighting of 42% in global consumption, which increased at 43% in 2013. According to the forecast of the Food and Agricultural Policy Research Institute FAPRI (2011), in the next 10 years beef consumption in China will increase with approximately 55%. The increase in beef demand on the Chinese market will be covered especially from domestic production. The OECD –FAO report, quoted by Stoian (2014), anticipates that this country will remain a net exporter, while The FAPRI report forecasts a small deficit of China on beef external trade.

The European Union, with a weighting of about 22% of the global consumption, occupied in 2013 the second place in the world. Although the average value of consumption registered in 2013 (approximately 64.7 kg. of meat per capita) was the lowest in the last 11 years, the forecast is optimistic, an increase of up to 66.1% per capita in 2023 being expected. Pork, the first type of meat preferred by the European consumers, is forecast to have an increase from 22 million tons in 2013 to 23.4 million tons in 2023 – figure 1, 3. The most dynamic sector in the community area is chicken, which will have an increase in production from 13 million tons in 2013 to 13.6 million tons in 2023. In the beef community production and consumption, European authorities forecast a slight decrease in quantities, from approximately 7.8 million tons in 2013 to 7.6 million tons in 2023. The disappearance of quotas for milk production will probably lead to the availability of some cattle for meat, associated to meat intercommunity export liberalisation from 2015 (Business 24, 2014). The great European beef producers are Spain, France, Germany, Italy, Great Britain and the Netherlands (Appendix B, figure 2). With an annual beef production of 29,000 tons, Romania occupies a modest position in the European ranking.

The beef sector in Romania

Romania, with a total surface of 238,000 km^2, holds 6% of the total European surface. The national territory presents a high natural potential for the breeding of animals, potential that is represented by approximately 5 million ha of pastures and hay fields, fact which offers to breeders the possibility to feed at least 8 million cattle and 20 million sheep (Recolta.eu, 2011). Unfortunately, this natural advantage, which could offer the conversion of vegetal resources into sufficient meat production to cover the domestic need and ensure large quantities for export, is not capitalized. The rise in beef demand on the community and international market, the potential markets in China, the exports towards Arab countries have brought the beef sector and local farmers to the attention of Romanian officials. Romania's government drew up a series of national strategies in animal breeding, correlated with the European projects for food production and agriculture development. These strategies didn't have a major impact on the development of the national sector. With few exceptions, represented in the last years by sheep and horse meat, Romania occupies modest places as far as the main criteria specific to livestock production are concerned. Thus, a hierarchy of European countries, which takes into account the number of livestock, drawn up in 2012, ranked our country on intermediate positions (Romania was on the 11^{th} place at the number of swine, the 13^{th} at cattle and $4^{th}/6^{th}$ at sheepand goats). According to the FAO statistics, quoted by the Romanian Organization for the Promotion of Trade and Foreign Investment (2012), Romania occupies intermediate places in Europe at the production of different types of meat (14^{th} place at pork and beef production, 6^{th} place at goat and sheep meat production). According to the Eurostat data regarding the assessment of the slaughtered animals (2013), Romania was at community level E27, on the 9^{th} place at swine, with a number of 5363.8, and on the 10^{th} place at cattle, with 1988.9. Although the numbers are relatively large, in a ranking regarding the number of slaughtered animals for meat production/equivalent to carcases carved in slaughterhouses and farms, certified for consumption, within EU (27), Romania descends from comes lower, occupying the 13^{th} place at swine (263,329 tons), and the 20^{th} place at cattle (29,067 tons) – data provided by Eurostat, quoted by the Romanian Organization for the Promotion of Trade and Foreign Investment, 2013 (Table 4). During the year, meat production is slightly fluctuating from one month to the other. For example, the NIS 217/2014 press release, regarding Romania's meat production in July 2014, indicates that, in comparison with the same month in 2013, the number of slaughtered animals and fowls and

their dressed carcase weights increased at swine, sheep, goats and fowls, but decreased at cattle. (Meat industry 2014, NIS 2014). The press release from June 2014 specifies an increase in the total number of slaughtered animals and fowls and their dressed carcass weights for all the species, as compared to the same period from the previous year (INS, 2014).

Cattle breeding represent a traditional activity for the population living in the rural areas, especially the people who live in the mountains. The low energy consumption, the nature of the fodder they use, and production diversity render a durable and long-term character to this domain. The natural potential allows the possibility to have enough productions to cover the domestic and export need for beef, which could bring high profits to the producers. Beef, together with the skin or the dairy products represent a source for commercial exchanges, ensuring workforce stability in the rural and mountainous areas. The slaughter of animals is done mainly in the specialized industrial units.

The indigenous beef production and cattle number dynamics for 2008 – 2013 is presented in table 2. Out of the data presented, one may notice that the number of cattle in Romania registered a significant decrease in the analysed period as far as both the total number of animals is concerned (with a decrease of approximately 815,000 heads) and animal categories. There is also a decrease as far as the total beef production from 2013 is concerned, correlated with the scandal which burst out because of the replacement of beef with horse meat. The analysis carried out by INS on a short term (March 2014/March 2013) specifies the fact that the number of slaughtered cattle and their dressed carcass weight increased with 4.1% and 3.7% respectively. Table 5 presents some data processed as a result of the information provided by INS regarding beef consumption, Romanian exports and imports between 2008 and 2013. The average beef consumption per inhabitant decreased from 4.9 kg. in 2008 to almost 3.3 kg. in 2013, the most affected social categories being the unemployed and the pensioners, with a drastic decrease in the consumed quantities, 33.3% and 52% respectively. No social category which was analysed didn't register an increase in consumption in the analysed period. It is possible that the data presented did not cumulate the slaughter for self-consumption from households or the illegal ones, but even if they were taken into account, Romania is under the European level of consumption. The Romanians traditionally eat pork of chicken due to the convenient price, although they are aware of the superior features of beef. For the year 2020, a growth of the total beef and veal consumption to 215,000 tons is estimated, 10 kg./inhabitant respectively, which represents 65% of the average consumption per inhabitant in EU27 (15.37 kg./inhabitant) (Serbănescu, 2014). Beef domestic trade is dominated by imports. Thus, Romania imported beef (cattle, refrigerated or frozen meat) worth almost 44 million euros, exporting animal products from beef (cattle, refrigerated or frozen meat) worth 173,735 euros. The main exported product, with a weight of almost 85%, was represented by cattle. There are specimens of young cattle for fattening in Italy, Greece and Spain because Romanian animal breeding does not have the facilities necessary to optimize growth systems. The Romanian meat producers prefer to export to the West, where there is a market with good prices and payment terms, leaving the local market to the importers. Thus, if on the domestic market, the average price paid to the producers at farms is approximately 10 lei/kg., at export they can obtain 30% higher prices. On the other hand, the Western consumers firstly appreciate the quality and then the price of the products. Reducing the purchasing power of the Romanian consumers does not allow for the purchase of the best quality products, the price being mainly the most frequent criterion in purchasing products. Practically, the Romanian companies prefer to send their products to foreign partners, thus obtaining good profits, than to adapt the offer to the local market. The imports mainly rely on frozen products – work meat for the Romanian plants from the meat processing sector.

According to the European Commission Report from 2013, "Rural development in the European Union: Statistical and economic information", Romania holds 32% of the total number of farms from the member states of the European Union (EU), having a total volume of labour of 17%. Although the number of farms is relatively large, the annual average income is modest, reaching 4000 euros for an average surface of 7.1 ha, under the European average of 14.3 ha. Most farms are small, being subsistence or semi-subsistence farms, and present low productivity. An assessment of the sector, made in 2011, shows that only 20 animal breeding farms from Romania have over 800 livestock. The over fragmentation of the structure represents a major problem of the animal farms from Romania. Since 90% of the livestock is in small farms that have less than 5 cows, the access to development funds, the use of some fattening and breeding industrial systems, the use of some improved breeds of cattle for meat represent barriers that are very difficult to overcome for the local farmers.

Conclusions

Global forecast regarding beef production and consumption evolution is optimistic as there is a constant increase in demand from the part of the consumers. Romania has the natural resources to triple beef production, but the Romanian sector is dealing with organisation and financial difficulties.

Local producers can take advantage of the opportunities that exist on the domestic or foreign market, but some concrete support from the part of the state is undoubtedly necessary.

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Apendicies

Appendix A

Table no 1.
Beef and veal chemical composition

Indicator	*Beef*			*Veal*		
	Muscular tissue	*First quality*	*Second degree of quality*	*Muscular tissue*	*First quality*	*Second degree of quality*
Water %	*74,80*	*66,40*	*70,60*	*38,4*	*77,2*	*78,0*
Proteins %	*21,60*	*18,60*	*20,00*	*11,70*	*19,70*	*20,40*
Conversion factor	*6.25*					
Total lipids(g/100g)	*2,5*			*85,0*	*14,00*	*8,30*
Essential amino acids (mg/100 g)	*8093*	*7137*	*7696*	*4605*	*7626*	*7981*
Non-essential amino acids (mg/100 g)	*12967*	*11292*	*12240*	*7068*	*12133*	*12295*
Vitamin A, mg/100g	-	*traces*	*traces*	*traces*	*traces*	*traces*
Vitamin E, mg/100g	-	*0,57*	-	-	*0,15*	-
Vitamin C, mg/100g	*traces*	*traces*	*traces*	*traces*	*traces*	*traces*
Vitamin B6, mg/100g	*0,42*	*0,37*	*0,39*	*0,40*	*0,38*	-
Vitamin B12, mg/100g	*3,00*	*2,60*	*2,80*	*2,10*	-	-
Biotin mg/100g	*3,50*	*3,04*	*3,25*	*5,00*	-	-
Niacin mg/100g	*5,40*	*4,70*	*5,00*	*6,00*	*5,80*	-
Pantothenic acid mg/100g	*0,60*	*0,50*	*0,56*	*1,00*	*0,95*	-
Riboflavin mg/100g a	*0,20*	*0,15*	*0,18*	*0,25*	*0,23*	-
Thiamine mg/100g	*0,10*	*0,06*	*0,07*	*0,18*	*0.14*	
Folacin mg/100g	*9,60*	*8,40*	*8,90*	*6,00*	*5,80*	-
Colin mg/100g	-	*70,00*	-	-	*105*	-
Mineral substances %	*1,00*			*1,10*		

Table no.2
Indigenous beef production and cattle number dynamics 2008-2013

	Thousands of heads	*2008*	*2009*	*2010*	*2011*	*2012*	*2013*
Cattle - total		*2868,7*	*2617,2*	*2500,7*	*2112,9*	*2063,1*	*2054,0*
Bulls - total		*2831,8*	*2587,8*	*2472,6*	*2089,9*	*2041,8*	*2034,6*
Bulls under a year old - total		*771,2*	*636,3*	*604,1*	*508,9*	*467,4*	*475,4*
Calves for slaughter		*242,6*	*193,4*	*187,7*	*159,5*	*145,8*	*147,5*
Other bulls		*528,6*	*442,8*	*416,4*	*349,3*	*321,5*	*328,0*
Males		*206,6*	*159,8*	*144,8*	*118,0*	*105,8*	*110,7*
Females		*322,0*	*283,0*	*271,6*	*231,3*	*215,7*	*217,3*
Bulls (1 -2 years old) - total		*309,1*	*287,3*	*273,9*	*248,7*	*242,1*	*234,1*
Males		*103,1*	*95,5*	*90,4*	*80,0*	*74,0*	*77,9*

Females		*205,9*	*191,7*	*183,5*	*168,7*	*168,1*	*156,2*
For slaughter		*19,6*	*19,6*	*16,2*	*15,5*	*11,1*	*11,1*
Others		*186,4*	*172,1*	*167,3*	*153,2*	*157,0*	*145,1*
Bulls (min 2 years old)- total		*1751,5*	*1664,3*	*1594,6*	*1332,4*	*1332,3*	*1325,0*
Males		*37,2*	*36,9*	*31,9*	*26,3*	*23,3*	*19,5*
For reproduction		*5,2*	*5,1*	*5,0*	*6,6*	*7,7*	*6,7*
For slaughter		*10,6*	*10,0*	*9,5*	*11,6*	*9,1*	*5,8*
For work		*21,4*	*21,8*	*17,3*	*8,1*	*6,5*	*6,9*
Females		*1714,3*	*1627,4*	*1562,7*	*1306,1*	*1309,1*	*1305,6*
Heifers		*119,9*	*103,4*	*114,9*	*111,0*	*103,9*	*98,6*
Heifers for slaughter		*10,0*	*5,1*	*4,4*	*8,3*	*7,0*	*4,5*
Heifers (reproduction)		*109,9*	*98,4*	*110,6*	*102,7*	*96,8*	*94,1*
Cows		*1594,4*	*1523,9*	*1447,8*	*1195,0*	*1205,2*	*1206,9*
Milk cows		*1578,9*	*1512,3*	*1431,4*	*1181,1*	*1187,6*	*1193,8*
Other cows		*15,5*	*11,6*	*16,4*	*13,9*	*17,6*	*13,2*
Buffaloes - total		*36,8*	*29,4*	*28,1*	*23,0*	*21,3*	*19,4*
Cows		*25,1*	*22,0*	*21,4*	*17,2*	*16,7*	*14,6*
Other buffaloes		*11,7*	*7,4*	*6,7*	*5,8*	*4,6*	*4,8*
Total livestock meat production (thousands of tons)		*295*	*319*	*378*	*391*	*383*	*318*
Average weight at slaughter	*kg/head*	*208*	*258*	*321*	*328*	*333*	*275*

(*Source fordata processing:*INS TEMPO online)

Table no 3.
The average beef consumption per inhabitant and on social categories 2008 -2013 (kg/inhabitant)

	2008	*2009*	*2010*	*2011*	*2012*	*2013*
Total	*0,405*	*0,366*	*0,325*	*0,280*	*0,274*	*0,274*
Employees	*0,451*	*0,398*	*0,351*	*0,318*	*0,307*	*0,309*
Freelancers (non-agricultural activities)	*0,369*	*0,356*	*0,339*	*0,250*	*0,306*	*0,257*
Farmers	*0,206*	*0,192*	*0,175*	*0,167*	*0,184*	*0,176*
Unemployed people	*0,296*	*0,251*	*0,211*	*0,175*	*0,173*	*0,142*
Pensioners	*0,423*	*0,391*	*0,352*	*0,292*	*0,276*	*0,282*

(*Source for data processing*: INS TEMPO online)

Table no 4
Romanian cattle and beef exports 2008 -2012 (mii euro)

	2008	*2009*	*2010*	*2011*	*2012*
Cattle	*85484*	*76717*	*102503*	*104578*	*145716*
Beef – fresh or refrigerated	*6357*	*1126*	*3783*	*11865*	*18017*
Beef – frozen	*1733*	*1757*	*1760*	*5788*	*10002*

(*Source for data processing*: INS TEMPO online)

Table no 5
Romanian cattle and beef imports 2008 -2012 (thousands of euros)

	2008	*2009*	*2010*	*2011*	*2012*
Cattle	*8580*	*7354*	*9148*	*14516*	*10615*
Beef – fresh or refrigerated	*7029*	*16041*	*7328*	*9415*	*9742*
Beef – frozen	*27729*	*23362*	*24293*	*20362*	*23220*

(*Source for data processing:* INS TEMPO online)

Appendix B

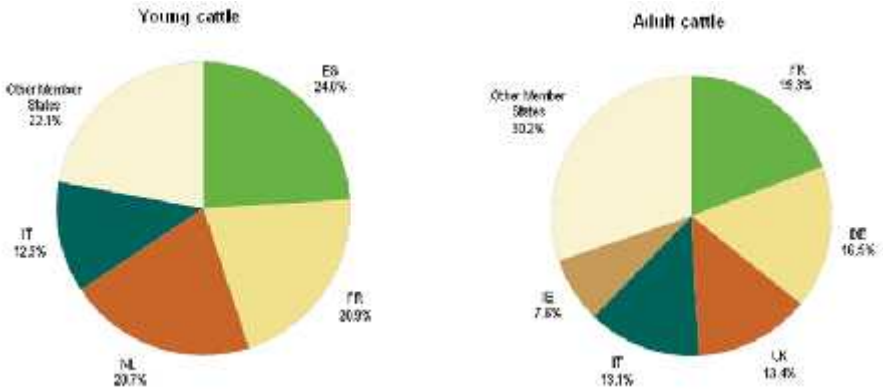

Figure no 1. The main community beef producers in 2012 (%)
(*Source: Eurostat, 2014*)

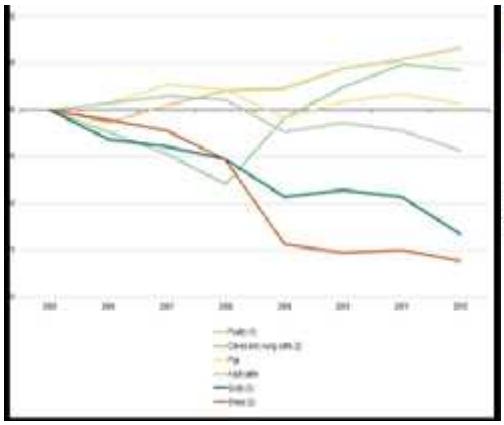

Figure no 2 The evolution of meat production in Europe 2005/2012 (*Source*: Eurostat databases)

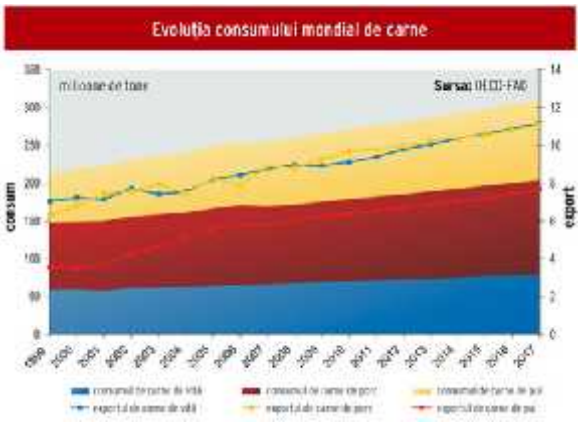

Figure no 3 Trends in global meat consumption (Source: http://www. fabrica *decarne.ro/industria- carnii- nu-recunoaste-criza*)