

WHEN WILL THE PORK SECTOR CRISIS END IN ROMANIA?

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Abstract

This paper aimed to analyse the evolution of the pork sector in Romania, from a pig livestock trend perspective, in the context of a continuous producers struggle with the spread of African Swine Fever Virus. The research method is based on a quantitative approach, based on time data series related with pig livestock in Romania for a period of two decades. The conclusions underline a continuous negative trend of pig livestock, which has been more pronounced in the late five years, but the results of the latest international research which led to development of a vaccine, that seems to be effective against ASF virus, gives hopes that, at least for the largest pig producers, the new context will no longer force them to slaughter entire heard of pigs.

Key words: African Swine Fever Virus, livestock, pork sector, Romania

INTRODUCTION

The swine fever continued to be the main problem for the world pork market in 2021, but while the diseases in the European Union started to be under control, with few exceptions as Poland and Romania, the diseases started to spread in Asian countries as Bhutan and Malaysia. The authorities' efforts for the diseases control are limited of the virus present in the wild boar which transmit the virus especially to the households and small farmers which cannot provide enough security measures for their heard of pigs [8]. To be able to avoid the diseases threat, the enterprises from this sector have to invest in relation with safety measures and to develop a secure epidemiological environment. The recent researches on African Swine Fever Virus (ASFV) indicated that using live attenuated vaccines is the most promising option [13], even if many characteristics of this virus make vaccine development a difficult task for world researchers. After one hundred years of researches related with various forms of this virus [13], the scientists are close to find viable solution to protect the virus spread in the pig herds. So, this year, the Agriculture

Research Services from the US Department of Agriculture's claimed to find a vaccine able to prevent and effectively protect both European and Asian bred swine against the current circulating Asian strain of the virus [17]. While the pork production declined in Romania, as we showed in recent related studies [5, 6, 7], the largest producer in Romania, the Smithfield Group which bought COMTIM plant in Timiș in 2004 and is growing about 1.3 million pigs yearly showed its intentions to increase the number of pigs delivered by their farms and the volume of Romanian pork products made entirely from local production, based on pigs' vaccination campaign [16]. In Romania the decline of pig livestock reached 10 consecutive years. As previous studies showed [15] this decline is not only related with the ASFV crises, but has deep connexions with the low financial support of pig breeders and without a strong financial support of the sector, Romania will continue to import most part of the pork meat, in order to cover the internal demand for pig meat consumption. The effects of African Swine Fever in Romania, reported since the summer of 2017 [1], continued to multiply between 2018 and 2020 [10]. From the National Sanitary Veterinary and Food Safety

Authority of Romania reports we can notice that 543 thousand pigs were sacrificed in until the end of 2019 [2] while only in 2020 more than 194 thousand pigs were sacrificed in order to stop the spread of ASFV [3].

The data related with the evolution of the disease in 2021 are not final, but if we analyse the number of outbreaks, we can find that if in 2019 were recorded 1,728, in 2020 their number decreased to 1,063, but a worrying new evolution has taken place in 2021 when until the end of September was recorded the incident of 1,378 new outbreaks [4].

After 5 years with many outbreaks of the virus, the new context gives hope at least for the largest Romanian pig producers in relaunching their development.

Since the ASFV can be transmitted via direct or indirect contact [9] the main problems of the pork sector in Romania will be related with the virus spread between domestic and free-living pigs and will affect more the smallholder communities for which the poor biosecurity makes them fragile in the fight with ASF virus.

This paper aimed to make an update of the evolution of the pork sector in Romania, being a continuation of previous articles of the authors in connection with this subject, but using a different method of data processing and interpretation, and also focusing only on livestock.

MATERIALS AND METHODS

The paper analysed the evolution of the pig livestock and live weight of the pigs for slaughter. The research was conducted at the regional and national level, for the period 1990-2020.

Evolution of the pig livestock was represented in tables that included reference years of the analysed period. For this study we calculated the mean, the standard deviation, the coefficient of variation, the annual rate, and the evolution of the 2020 related with 1990, both for the pig livestock and for the live weight of the pigs for slaughter. The data were provided of National Institute of Statistics.

RESULTS AND DISCUSSIONS

The evolution of the pork sector in Romania was affected in first part of analysed period by the transition from a planned economy to a market economy which produced many changes in the production sector, related with the first significant reduction of pig livestock and the shift of the production from the state to the private sector. The integration of Romania within European Union in 2007, produced the second wave that contributed to the reduction of the pig livestock, but some benefit appeared in relation with the development of performant enterprises specialized in the pig production and the improvement of animal conditions in the farms.

But the summer of 2017 brought one of the most difficult challenge that affected the entire pork sector, related with the spread of AFS virus both in the small and large pig farms. The data provided by the European Commission indicated that Romania had in 2021 a number of 1,119 ASF outbreaks in domestic pigs, followed by Poland with 71 outbreaks, from a total of 1,207 cases at the EU level. More than that, between 2019 and 2021 was the most affected country of the EU at the farm level. Also, Romania had a significant number of ASF cases recorded in the wild boar.

Romania recorded a decrease of over 68% of pig livestock between 1990 and 2020, from 12 million heads in 1990 to 3.7 million heads in 2020. While in 1990 the South Muntenia was the region with the largest pig livestock of over 2.5 million heads, in 2020 the West Region was in the first position with 0.9 million heads. It can be also noticed that if in 1990 all the Romanian regions, excepting Bucharest Ilfov had over 1 million pigs (Table 1.), in 2020 not even one region has reached this threshold. From 2007 to 2020 only the West Region managed to maintain an appropriate level of pig livestock, while regions as North East, South East or South Muntenia suffered huge reductions of pig livestock.

For this period the annual rate was -3.77. The average pig livestock for the period 1990-

2020 was 6.3 million heads, the dispersion of the data set relative to its mean generated a standard deviation of 2 million heads. This conducted to a coefficient of variation of 0.32 at national level. While for the Bucharest Region the decrease of over 96% is self-understood by the urbanization trend, the decrease of over 79.9% in the South Muntenia Region and of over 73.3 % in the South East Region indicates that at least in these regions

the consumption of pork meat can only be covered by considerable imports and the pressure on pork prices are significant due to high level of pork consumption in these regions. Within the regions, the Centre Region had the highest mean of pigs' livestock, of 853 thousand heads for the period 1990-2020, followed by South Muntenia Region, with 851 thousand heads and West Region, with 717 thousand heads.

Table 1. The evolution of the pig livestock in Romania between 1990 and 2020 (heads)

	1990	2000	2007	2016	2017	2018	2019	2020
Romania	12,003,384	4,797,357	6,564,907	4,707,719	4,406,014	3,925,283	3,834,136	3,784,507
North West Region	1,430,800	825,575	885,048	624,440	564,142	526,530	560,871	547,087
Centre Region	1,131,000	605,228	760,518	456,815	400,891	374,759	372,419	382,534
North East Region	1,458,600	660,421	806,138	488,421	458,394	447,482	381,248	425,284
South East Region	1,759,300	568,980	885,476	739,728	723,825	468,624	482,007	468,669
South Muntenia Region	2,574,700	791,556	1,131,926	832,781	753,815	649,680	583,808	515,742
Bucharest - Ilfov Region	344,800	138,568	191,647	33,083	27,324	23,610	10,002	12,144
South West Oltenia Region	1,184,700	569,019	936,132	588,082	558,292	519,960	499,081	483,415
West Region	2,119,500	638,010	968,022	944,369	919,331	914,638	944,700	949,632

Source: National Institute of Statistics, 2021 [14].

The highest standard deviation within regions was recorded in the Bucharest -Ilfov Region, of 475 thousand heads, while the smallest was

recorded in the South West Oltenia Region, of 91 thousand heads (Table 2).

Table 2. Indicators calculated in relation with the evolution of the pig livestock in Romania for the period 1990-2020

	MEAN	STDEV	COEF. OF VARIATION	ANNUAL RATE	2020/1990
Romania	6,319,591.19	2,055,983.56	0.33	-3.77	-0.68
North West Region	6,130,131.43	1,794,913.33	0.29	-3.15	-0.62
Centre Region	853,106.90	217,294.30	0.25	-3.55	-0.66
North East Region	658,411.10	194,593.53	0.30	-4.03	-0.71
South East Region	714,923.23	217,382.05	0.30	-4.31	-0.73
South Muntenia Region	851,536.57	286,081.18	0.34	-5.22	-0.80
Bucharest - Ilfov Region	1,147,750.30	475,934.76	0.41	-10.55	-0.96
South West Oltenia Region	153,384.63	91,221.61	0.59	-2.94	-0.59
West Region	717,965.57	153,047.54	0.21	-2.64	-0.55

Source: own calculation based on INSSE data base [14].

The coefficient of variation was consequently the highest in the South West Oltenia Region, of 0.59, while the smallest was calculated for the West Region, of only 0.21. The annual rate varied within regions, between -10.55 in the Bucharest Ilfov Region, and -2.64 in the West Region (Table 2).

Regarding the evolution of weight for the pigs for slaughter, between 1990 and 2020, this decreased from 10.1 million to in 1990 to 4.9 million to in 2020. In 2007, the year of integration of Romania in the European

Union, the weight of the pigs for slaughter already decreased to 6.4 million tons.

At the region level, the West Region had the highest weight of live pigs for slaughter in both in 1990 and 2020, of 222 thousand to, respectively 167 thousand to. Three regions recorded in 2020 a quantity of over 60 thousand to of the live pigs for slaughter: 66 thousand to for the South Muntenia Region, 65 thousand to for the North West Region and 60 thousand to for the South East Region. The weight of the live pigs for slaughter in the Bucharest - Ilfov Region indicates that this

one is no longer significant for the pig production (Table 3).

Table 3. Evolution of the weight of live pigs for slaughter in Romania between 1990-2020 (tons)

	1990	2000	2007	2016	2017	2018	2019	2020
Romania	1,010,045	669,783	641,505	588,085	583,146	549,806	512,492	498,098
North West Region	114,847	98,188	85,521	81,779	79,797	74,274	70,353	65,618
Centre Region	96,373	82,414	80,267	62,544	69,504	55,543	50,446	43,352
North East Region	121,209	87,708	74,786	71,863	59,989	58,513	51,564	56,013
South East Region	120,951	76,493	84,879	81,503	82,767	72,216	62,207	60,002
South Muntenia Region	213,241	140,444	109,838	84,935	86,176	77,140	72,744	66,674
Bucharest - Ilfov Region	32,407	19,651	20,401	3,750	3,121	1,957	1,318	1,490
South West Oltenia Region	87,790	86,408	79,438	49,762	51,676	46,584	41,433	37,662
West Region	223,227	78,477	106,375	151,949	150,116	163,578	162,427	167,286

Source: International Trade Center and own calculations [11].

The results for the indicators related with the evolution of the pigs' weight for slaughter indicated that the mean at the national level was established at 7 million to, with a

standard deviation of 177 thousand to. For the period 1990-2020 the coefficient of variation at national level was 0.25 and the annual rate was negative, of -2.33 (Table 4).

Table 4. Indicators calculated in relation with the evolution of the pigs' weight for slaughter in Romania for the period 1990-2020

	MEAN	STDEV	COEF. OF VARIATION	ANNUAL RATE	2020/1990
Romania	700,253.06	177,615.46	0.25	-2.33	-0.51
North West Region	689,926.67	170,925.22	0.25	-1.85	-0.43
Centre Region	91,184.40	21,316.85	0.23	-2.63	-0.55
North East Region	78,055.83	19,693.43	0.25	-2.54	-0.54
South East Region	80,985.30	22,802.27	0.28	-2.31	-0.50
South Muntenia Region	89,059.30	18,900.89	0.21	-3.80	-0.69
Bucharest - Ilfov Region	128,460.90	51,656.32	0.40	-9.76	-0.95
South West Oltenia Region	20,319.60	12,879.78	0.63	-2.78	-0.57
West Region	69,199.80	17,823.64	0.26	-0.96	-0.25

Source: International Trade Center and own calculations [11].

Comparing the evolution of the pigs' livestock with the evolution of the weight of live pigs for slaughter we can assume that the productivity has increased in the analysed period.

CONCLUSIONS

Romania is still the main affected country by the African Swine Fever from the European Union. The pig livestock continued to decrease and only the West Region could maintain their pig livestock at a level around 1 million pigs. The weight of the life pigs for slaughter also decreased during the 1990-2020, but not in the same measure, which that might be related with an increase of the pork sector efficiency.

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