

**Ewa Bąk-Filipek<sup>1</sup>**

Warsaw University of Life Sciences – SGGW

## Changes in Polish Foreign Trade of Cattle Livestock and Beef

**Abstract.** The main objective of the study was to analyse the changes and the conditions of foreign traded beef. The economic and political situation has had an impact on Poland's foreign trade of agricultural food products. The main factors affecting international trade, and which have significantly decreased the growth rate of exports and imports of animal products, are the following: decreased oil prices and exchange rate fluctuations, uncertainties related to the conflict in Ukraine, restrictions in trade with Russia, destabilisation in the Middle East and concerns about the future of the euro zone.

**Key words:** export, import, foreign trade, livestock, beef, Poland

### Introduction

The main objective of this paper is to analyse changes and conditions of Poland's foreign beef trade in 2011-2014. The country's foreign trade in agricultural-food products has been influenced by the economic and political situation (Rynek rolny, 2016). The main factors affecting international trade have been the fall in oil prices and exchange rate fluctuations, the uncertainty associated with the conflict in Ukraine, restrictions on trade with Russia, destabilisation in the Middle East and concerns about the future of the euro zone. Both the growth rate of exports and the growth of imports of animal products decreased significantly during the 2011-2014 period.

In 2015, the situation in Polish foreign trade was influenced by the following factors:

- the economic situation in the countries of the EU and other developed countries;
- Poland's trade partners;
- economic growth in developing countries;
- the economic situation in markets to the east (CIS, especially Russia and Ukraine);
- political and legal factors (restrictions on exports to Russia, restrictions related to African swine fever, ritual slaughter);
- deterioration in the relationship of supply and demand on the national markets and the stabilisation of plant products on global markets;
- the improving relationship between supply and demand on national markets for animal products;
- low agricultural commodity prices on global markets;
- appreciation of the zloty to the euro and weakening of the euro to the US dollar.

In 2015, meat, offal and other meat product exports were expected to increase. Market dynamics were expected to stem the decline of red meat and slightly increase the import of animal products. Live animal and meat product imports were expected to rise (Handel..., 2015).

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<sup>1</sup> PhD, Department of European Policy, Public Finance and Marketing WULS-SGGW, ul. Nowoursynowska 166, 02-787 Warszawa, e-mail: ewa.bak.filipek@wp.pl

## Methods

This research has been carried out using following methods: monographic, analysis, synthesis and statistical analysis. The data were collected by Poland's Central Statistical Office (CSO), Ministry of Finance and The Institute of Agriculture and Food Economics – the National Research Institute. The study used methods of descriptive analysis and comparison, based on the material collected. The analysis covers the period 2011-2014 and estimates for the year 2015. The descriptive analysis is support by tables to present the information.

## Results and discussion

During 2011-2014, chilled beef was the most commonly exported beef product (it commanded a 63% share of total beef exports). Frozen meat accounted for 20%, while offal of bovine animals (11%) and livestock beef (6%) commanded a lower share. The European Union took 87% of Poland's beef products. In 2014, Japan abolished its embargo on beef product imports from Poland, which had been introduced in 2001 in response to the presence in Europe of mad cow disease. Despite Russia's placing an embargo on certain beef products from the EU and Poland, the volume of Polish exports of beef products in the last months of 2014 were similar to 2013 figures.

During the analysed period, the commodity structure of imports of beef products underwent significant changes from the four years that preceded it. The share of live bovine animals in the value of imports increased from 30% to 56%, while the share of imports of frozen meat fell over the same period from 16% to 7%, as did beef offal, from 25% to 10%. Traditionally canned beef (4%) accounted for a small share of imports (Handel ..., 2016). Throughout this period, approximately 99% of the value of imported beef products came from the EU. Poland imported beef mainly from Germany, Ireland, Slovakia and the UK.

It is expected that the volume of exported beef products will be similar this year to last year. Beef products imports are likely to increase by about 13%, mainly due to a significant increase in the import of live bovine animals. In the end, a decline in the positive balance of foreign trade turnover was primarily due to increased imports.

## The Global Beef Market

The global production of beef in 2015 was 58,4 million tonnes, or about 2,2% less than 2014 production. This resulted mainly from a decline among the leading beef manufacturers—The United States (2.4%), Brazil (3.1%) China (2.8%), Australia (1.8%), Russia (1.1%) and Canada (4.5%). This large reduction could not compensate for the increase in EU-based producers (up 2.3%), Mexico and Argentina (up, respectively, 1.3% and 1.5%) (Rynek ..., 2016).

In almost all countries that saw a fall in production, a shorter- or longer-term reduction in cattle numbers preceded it. In the United States, this occurred in the last eight years. In December 2014, the cattle population was about 8% less than in 2006, but at the same time about 1% higher than in the previous year. The main factors in the per annum growth were improving pasture conditions and lower feed costs. Brazilian beef production declined due

to drought, which occurred in the most important areas of production and lasted for two consecutive years.

In China, the production decline was a reflection of the rising costs of rearing cattle and the Chinese processing industry's preference for imported bovine animals, which are often cheaper than native cattle. In 2015, China imported 663,000 tonnes of cattle and beef, a 59% rise over the previous year. A decisive factor in the increase was China's agreement with Australia on free trade and the high competitiveness of Australian cattle. Imports also promoted demand (Rytko, 2015).

In Russia, the decline in livestock and beef production has now lasted for twenty-five years. During that time, the cattle population has decreased by approximately 70%. For the sector, there are 53 operating programmes distributing 10.2 billion rubles in support funds. This support goes mainly to companies with large-scale production. In 2015, capital available for investment decreased as a result of the economic crisis, which weakened the ruble and brought high volatility, as well as accelerated inflation and rising interest rates. More farm animals were imported in an attempt to rebuild and improve the gene pool. In 2015, 100,000 head of cattle intended for further breeding were purchased from foreign customers. More than half of them (55,000) came from Australia. This marked a 72% increase over the previous year's total (Rynek ..., 2016).

In 2015, beef production in the EU-28 increased. The highest growth occurred in Italy (11.1%), Spain (9.5%), Belgium (3.9%), Austria (3.2%) and France (2.2%). Italy is the third-largest producer of beef in the European Union, though the country's production has fallen in successive years. Italy has a preponderance of relatively small, family farms that specialise in cultivating young calves, imported from France or from Poland. In 2015, those imports were 20% lower than in 2012. As a result, Italy's share of the EU's beef production decreased from almost 13% in 2012 to 10% in 2015 (Rynek ..., 2016).

Spanish beef production is done on the strength of relatively cheap feed and high production efficiency. Spain is the fifth-largest producer of beef in the EU-28. It accounted for 8.2% of EU-28 production in 2015, higher than the 7.7% it made up in 2012. The EU's largest beef producer, France saw a relatively small increase in production in 2015 over 2014. The country's long-term trend line nonetheless points upward, though growth will remain relatively poor. In 2015, France boasted the largest herd of suckler cows in the EU-28, accounting for 34% of the bloc's overall population. At approximately 19%, France's share of EU beef production has been relatively stable for many years.

In December 2015, the world's cattle population was 971.5 mln units, or 1% higher than in 2014. In China, the decline in the population (0.2%) was small enough that the herd size could be considered stable. The population declined 4.1% in Australia, 2.1% in Russia, 3.5% in Mexico, and 2.5% in Canada. Brazil (2.9%), the USA (3.5%) and the European Union (0.2%) all saw their populations increase (Rynek ..., 2016).

In Russia, the reduction of herds is the continuation of a long-term downward trend, caused by low profitability, particularly of milk production. This has helped to reduce the number of cows, as the end result is a decline in livestock and beef production in connection with the global crisis and the difficult access to credits. Moreover, imported animals have become too expensive for many beef producers.

In Australia, the rising price of cattle and beef and the lack of feed, especially in the northern part of the country, the country's centre of cattle ranching, contributed to substantial reductions in the number of cows and heifers, especially in 2013-2014. This reduction was facilitated by the free trade agreement with China and other Asian countries

and the attractive prices of exports. As a result, in December 2015, the bovine population was 10% smaller than in December 2012.

Brazil has increased its cattle population as a result of improved genetics and production efficiency. However, producers complain of the depreciating Brazilian currency, which does promote exports, but also leads to higher cattle production costs due to the need to import animals with improved genetic characteristics, medicine or feed ingredients.

In 2015, Australia exported 1.336 thousand tonnes of live cattle, which was 3% more than in 2014 and twice more than in 2012. Exports to Indonesia accounted for 15% less and to China 30% less than in 2014, which had reached a record level. At the same time, exports to Vietnam were higher by about 81%.

In Argentina, the party that ruled until the end of 2015 had sought to provide cheap beef to Argentinean consumers. However, the provisions in force in the period 2005-2015 resulted in a decline in production and exports. Exports were taxed; the export of meat was reduced and in some cases banned, while quotas on the provision of cheap beef to local supermarkets were imposed. As a result, Argentinean beef production decreased by 17% between 2007 and 2015. The meat industry also bore the losses as numerous slaughterhouses and processing plants were shuttered. The newly elected government has changed its policy governing the beef sector, including eliminating the 15% export tax.

The European Commission predicts that in the EU-15, the average increase in beef production may reach 1.4%, but in some countries will be much larger. Production may increase by 6.2% in Belgium, 4.1% in France, 3.4% in Italy and 2.2% in the UK. In these countries, increased slaughtering of cows would additionally increase beef production. In the UK, increased production could increase exports by upwards of 30% and decrease imports by approximately 1%. In the EU-13, production is expected to rise by about 7%, mainly in Romania, Czech Republic and Lithuania.

### **Poland's cattle population and beef production**

In the last several years in Poland the number of cows has fallen steadily, while cattle numbers have increased. This has led to changes in the structure of the overall bovine population (Table 1). There has been a slight increase in the number of suckler cows - a few to several thousand units per year - but at 6.5%, they make up only a small share of the total cow population.

At the end of 2014, the cattle population stood at 5,660,300 units, or 1.1% more than in 2013. The number of cows was lower by 1.6% while other cattle increased by 3.3%. A positive development for the potential of Poland's beef market was the increase in the population of young cattle and calves by, respectively, 5.5% and 2.4%. Slightly improved profitability helped the number rise, though it was accompanied by a decline in the price of fattening calves and young cattle for slaughter. The share of the remaining cattle numbers increased to 58%, while cows decreased to 42% (tab. 1 and 2).

The increase in the number of cattle varied by farm type. The number on individual farms, home to 94% of the cattle population, grew less than the average. At the same time, the number of private companies and cooperatives of agricultural production engaged in the rearing of all age groups of animals increased. In the public sector the cattle population remained at 2014 levels, but its importance was marginal.

Table 1. The number of cattle at the end of the second quarter and annual beef production

Years	Population in thousands of units	Including				Production of beef in thousands of tonnes
		cows thous.units	%	other cattle thous.units	%	
2011	5 762	2 626	46	3 136	54	751
2012	5 777	2 578	45	3 199	55	718
2013	5 861	2 526	43	3 335	57	714
2014	5 920	2 479	42	3 441	58	805
2015	5 960	2 444	41	3 516	59	918

Source: the author's own calculations based on "Market Analysis: Meat market. Status and prospects". Market analyses. Ed. IAFE - NRI, ARR. Warsaw 2015 and 2016.

Table 2. The number of cattle and beef production

Years and half-years	Cattle older than 1 year in thousands of units	Percent of slaughter cattle older than 1 year	Production of beef in thousands of tonnes
2011	X	16,2	751
I half-year	4 173	16,1	374
II half-year	4 280	16,3	377
2012	X	15,3	718
I half-year	4 139	14,9	345
II half-year	4 309	15,7	373
2013	X	15,2	714
I half-year	4 132	14,0	332
II half-year	4 275	16,4	382
2014	X	16,7	805
I half-year	4 179	16,2	394
II half-year	4 312	17,2	411
2015	X	18,5	918
I half-year	4 225	17,6	418
II half-year	4 291	19,2	500

Source: the author's own calculations based on "Market Analysis: Meat market. Status and prospects". Market analyses. Ed. IAFE - NRI, ARR. Warsaw 2015 and 2016.

Despite stagnation in the cattle population last year, beef production rose significantly, to 807,000 tonnes, a 13% rise over the previous year. This includes the effect of rising imports of calves, which increases beef production. In 2014, 31,900 calves were imported, a 45% increase over 2013.

According to CSO data, 2 million calves were born in 2014, or 10% more than a year earlier. 17% of the calves born were slaughtered, compared to 21% in 2013, and 24% in 2011 (Table 3). The ratio of calves slaughtered to calves born has been decreasing gradually for years, partially because more calves are being exported. 120,000 calves were exported in 2014, a full 33% less than in 2013. The drop in calf exports is offset by higher beef exports.

Table 3. Birth and slaughter of calves and cattle calf production

Years and half-years	The birth of calves in thousands of head	Slaughtered calves in %	Production of live cattle in thousands of tonnes
2011	1 967	29	47
I half-year	1 193	25	24
II half-year	774	36	23
2012	1 879	24	41
I half-year	1 123	22	22
II half-year	756	25	19
2013	1 835	21	33
I half-year	1 043	18	17
II half-year	792	24	16
2014	1 899	16	30
I half-year	1 210	14	15
II half-year	689	18	15
2015	1 992	5	14
I half-year	1 199	6	8
II half-year	793	5	6

Source: the author's own calculations based on "Market Analysis: Meat market. Status and prospects". Market analyses. Ed. IAFE - NRI, ARR. Warsaw 2015 and 2016.

34,000 tonnes of veal was produced, or 3% more than the previous year. The successive increase in the last few years is the result of growing imports and the decreasing number of calves exported.

### Foreign trade in the beef market

Despite Russia placing an embargo on beef imports from the EU, Polish exports of live cattle, meat, offal and processed beef were, at roughly 350,000 tonnes, about the same in 2014 as they had been in 2013. The value of exports decreased by 6% to about 1,050 million due to a decline in transaction prices, among other factors (Skup ..., 2012). Although Russia accounted for 25% of EU exports of beef products to third countries, Polish beef remained competitive in terms of price on the EU market. Therefore, the restrictions Russia placed on imports did not have such a large impact on Polish exports of beef products. The European Commission reported that in 2014, EU beef export volume increased by 29% due to an increase in exports to countries such as Hong Kong, the Western Balkans and the Philippines. EU imports from third countries increased during this time by just 1%. Meanwhile, imports from Argentina and Uruguay fell as a result of internal policies, while Australia and Brazil both increased sales to the EU.

Table 4. Foreign trade turnover of beef equivalent meat products (thousands of tonnes)

Specification	2011	2012	2013	2014	2015
Total export	312,8	315,0	332,4	359,7	414,4
Cattle	24,5	18,6	14,3	11,5	10,8
Meat and offal	288,3	296,4	318,1	348,2	403,6
Total import	22,0	23,1	28,1	34,1	42,5
Cattle	4,9	6,9	12,6	15,0	15,7
Meat and offal	17,1	16,2	15,5	19,1	26,8
Balance	290,8	291,9	304,3	325,6	371,9

Source: the author, based on "Market Analysis: Foreign trade in agri-food products. Status and prospects". Market Analysis IAFE-NRI, AMA and the Ministry of Agriculture and Rural Development. Warsaw, April 2016.

Polish imports of beef products increased by 21%, primarily as the result of an 18% increase in imports of live cattle, as well as chilled meat and beef offal. At the same time, imports of frozen beef decreased by 15% to 3,400 tonnes.

Foreign trade in beef showed a 933 million-euro surplus, but was approximately 79 million less than in 2013. 300,000 more tonnes of beef were exported than imported, which was 3.3% lower than in the previous year (Table 4).

Table 5. Foreign trade of beef (in millions of euros)

Specification	2011	2012	2013	2014	2015
Total exports	979,8	1 083,0	1 114,0	1 107,6	1 359,6
including					
Chilled beef	682,4	731,7	753,7	742,3	934,8
Frozen beef	124,9	161,9	196,2	213,6	266,8
Canned beef	57,2	69,8	71,5	67,1	71,3
Offal	16,4	21,9	25,6	31,7	35,0
Beef and veal livestock	98,9	97,7	67,0	52,9	51,7
Total imports	75,9	81,4	101,7	121,5	142,5
Including:					
Chilled beef	26,3	29,0	26,3	34,7	44,6
Frozen beef	14,2	11,2	15,2	10,7	15,5
Canned beef	4,2	4,6	6,4	6,6	6,8
Offal	11,2	7,1	5,7	8,0	10,8
Beef and veal livestock	20,0	29,5	48,1	61,5	64,8
Balance	903,9	1 001,6	1 012,3	986,1	1 217,1

Source: the author, based on "Market Analysis: Foreign trade in agri-food products. Status and prospects". Market Analysis IAFE-NRI, AMA and the Ministry of Agriculture and Rural Development. Warsaw, April 2016.

As in 2013, 290,000 tonnes of chilled and frozen beef were exported in 2014 (Table 6). EU-bound beef exports decreased by 2.5% and to third countries increased by 20%. The increase in non-EU countries was primarily due to an increase in exports to countries

outside the CIS. Beef exports to CIS countries decreased by 4,700 tonnes, including to Russia by about 4,300 tonnes. Nearly 66% of the exported beef was exported to Italy, Germany, the Netherlands, Spain, France and Greece, which together accounted for 67% of Poland's total beef export volume.

Table 6. Polish exports of livestock, meat and beef by destination (thousands of tonnes)

Specification	2011	2012	2013	2014	2015
Beef fresh, chilled, frozen	266,0	272,9	290,0	308,8	366,7
Including to:					
UE-15	163,6	195,3	237,2	243,4	289,8
UE-13	17,1	16,8	24,3	31,3	31,9
Other countries	85,3	60,8	28,5	34,1	45,0
Including: ESL	13,5	16,7	18,2	13,5	8,3
Canned beef	17,2	19,3	18,8	19,5	20,6
Including:					
UE-15	12,3	13,6	13,6	14,4	14,7
UE-13	4,7	5,5	5,0	4,8	5,7
Other countries	0,2	0,2	0,2	0,3	0,2
Including: WNP	0,0	0,2	0,0	0,0	0,0
Cattle and calves total in the thousands of heads	344,6	305,0	226,8	161,9	138,7
Including to:					
UE-15	279,4	258,3	192,1	130,3	109,5
UE-13	17,1	8,4	17,7	13,0	10,2
Other countries	48,1	38,3	17,0	18,6	19,0

Source: the author, based on "Market Analysis: Foreign trade in agri-food products. Status and prospects". Market Analysis IAFE-NRI, AMA and the Ministry of Agriculture and Rural Development. Warsaw, April 2016.

Canned beef exports totalled 19,500 tonnes and were 4% higher than in the previous year. The decline in the value of exports of canned beef was the result of lower prices, among other factors. 99% of exports of canned went to EU countries, including to Sweden (4,400 tonnes), Germany (3,600 tonnes), Finland (2,900 tonnes) and Czech Republic (2,000 tonnes). 161,000 head of cattle and calves were exported last year—nearly 30% less than in 2013 (Rocznik ..., 2013), with a value which likewise decreased, by 22% to 52.5 million euro. The average weight of exported animals increased by 14 kg. The export of calves mainly decreased. In 2014 it was about 58,000, which was slightly lower than in 2013. The weight of calves exported increased, while the price per unit declined. The drop in cattle and calf exports was due to their lower profitability and decreasing interest among Member States in purchasing them from Poland. Exports to the EU-28 decreased by 32%, but rose to non-EU countries by 10%. Cattle exports to EU countries including Italy, the Netherlands, Spain and Croatia recorded the largest drop, while to Bosnia and Herzegovina exports rose slightly. The export price of cattle and calves also fell slightly.



Table 7. Polish exports of livestock, meat and beef by destination (in millions of euros)

Specification	2011	2012	2013	2014	2015
Beef fresh, chilled, frozen	807,3	893,6	950,0	955,9	1 201,6
Including:					
UE-15	504,9	656,5	779,8	769,3	962,9
UE-13	55,8	59,0	78,8	91,2	99,9
Other countries	246,6	178,1	91,4	95,4	138,8
Including: ESL	38,1	50,8	61,2	39,8	29,1
Canned beef	57,2	69,8	71,5	67,1	71,3
Including:					
UE-15	40,8	48,8	52,6	49,9	52,1
UE-13	15,9	20,4	18,6	16,6	18,7
Other countries	0,5	0,6	0,3	0,6	0,5
Including: ESL	0,1	0,4	0,1	0,1	0,0
Total heads of cattle and calves (in thousands)	98,9	97,7	67,0	52,9	51,7
Including to:					
UE-15	69,1	69,3	49,4	37,3	35,0
UE-13	12,5	6,7	10,4	6,6	6,2
Other countries	17,3	21,7	7,2	9,0	10,5

Source: the author, based on "Market Analysis: Foreign trade in agri-food products. Status and prospects". Market Analysis IAFE-NRI, AMA and the Ministry of Agriculture and Rural Development. Warsaw, April 2016.

Imports of cattle increased by almost 22,000head, due mainly to higher imports of calves (9,300) mainly from Lithuania and Slovakia as well as domestic cattle weighing more than 300 kg for slaughter. The increased imports brought about a decline in prices. The average weight of imported animals decreased by 10%, with cost savings of 3%.

Imports of beef were 2,500 tonnes higher than a year earlier, mainly due to a 38% increase in chilled beef imports. Polish beef was imported principally by Germany, Ireland, Slovakia, Great Britain, the Czech Republic and Lithuania.

Imports of canned and beef offal were higher by approximately 29% compared to 2013. This was mainly the result of a 45% increase in imported beef offal. The principal markets for the supply of canned beef were Germany, the Netherlands and Belgium, while the Netherlands, United Kingdom, Germany and Ireland were the largest importers of Poland's offal.

The European Commission predicts that this year, beef production in the EU could be approximately 1.5% higher than last year. Exports will increase by 8%, while imports will fall by approximately 1%. The situation in the pork market and the increase of poultry production may affect the beef market, especially increased cost-competitiveness and the related substitution effect.

Exports of beef products from Poland in 2015 may be at a level similar to 2014. Exports may favour a slight increase in the consumption of beef in the EU and the anticipated increase in EU exports to third countries. The drop in beef prices should come

to an end, which ultimately should result in an increase in the value of exports to 1,046 million euros.

Polish imports of beef products are likely to grow at 13% as a result of increased imports of live bovine animals. Exports are expected to outstrip imports this year by more than 293,000 tonnes. The decrease in the positive balance of the foreign trade of beef to approximately 917 million euros will be primarily the result of growth in imports.

## Conclusions

Despite the introduction of the embargo on beef imports from EU countries by Russia, Polish exports of meat and live cattle, meat offal and milk was similar to the level of the 2014. The value of Polish exports fell by 6% due to, among other factors, a decline in transaction prices. Polish beef prices were competitive on the EU market - the limits imposed by Russia didn't have a significant impact on Polish beef exports. Polish imports of beef rose by 21%, primarily because the country brought in more chilled meat and beef offal. In 2015, a slight increase in exports is expected to result from increased domestic production. The increase in exports would also maintain the price advantage Polish beef exported to the EU market commands. A possible recovery in demand for beef in EU countries and the expected increase in demand for beef in Asian countries (eg. Hong Kong and China) would also be a boon. The decision of the Constitutional Court of December 2014 regarding the ban on ritual slaughter as being out of compliance with the Constitution could also have a beneficial effect on the Polish beef market.

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