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FOREIGN TRADE OF MILK AND DAIRY PRODUCTS IN THE EUROPEAN UNION

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ABSTRACT

The objective of the paper is to present foreign trade of milk and dairy products in the EU. Particular attention is paid to exports and imports of milk and dairy products in the EU and globally. Graphs and tabular and descriptive methods are used to analyze the changes in trade. The analysis of foreign trade focuses mainly on 2020; however, global export of selected dairy products was analyzed for the years 2000–2020. The survey shows the development of trade for milk and dairy products in the EU countries and the world.

Key words: foreign trade, milk, EU countries, dairy products.

INTRODUCTION

The dairy sector is an important branch of global agriculture. This kind of activity provides work for many farmers not only in poor countries but in developing and developed countries alike [Dries et al. 2009]. Moreover, dairy farms are undergoing improvements through advances in many areas, for example, milking systems, dairy breeding, animal welfare and genetics [Gaworski 2016]. Milk production is becoming more concentrated, which means that the scale of production, cultivation and raising of livestock is increasing [Wysokiński et al. 2015]. The growth in milk production worldwide is also an effect of improved animal genetics and feeding systems [von Keyserlingk et al. 2009, Poczta et al. 2020].

Milk plays a very important role in the human diet because it contains high-quality protein, calcium, vitamins and other ingredients [Simo et al. 2016]. The production of milk and dairy products is increasing. This is because in certain countries and regions (e.g. the EU, New Zealand, or the USA) where the dairy industry is at the highest level, production serves the domestic dairy markets and also generates additional products for export. The exported food goes to countries where the domestic dairy industry is unable to meet the domestic demand or does not produce the product mix sought by consumers.

The difference between exports and imports is defined as a country's foreign trade balance. Countries that export more will have a positive balance, while importers will have a negative foreign trade balance. Trade is a factor shaping the competitiveness of the dairy sector [Irz and Jansik 2015].

The dairy industry plays a very important role in the EU because it produces a wide range of products, employs thousands of people and is responsible for a significant share of trade on European and world mar-

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kets. The competitiveness of the dairy chain is a crucial factor shaping the economic sustainability within a marketing environment. The growing awareness of food safety and sustainable development is also a public concern [Bojnec and Fertőt 2014].

The milk market faces many changes in the world which affect prices, consumption and trade. The demand for milk in the European Union is rather stable and Europe must shift to emerging markets in Africa, the Middle East and Asia [Giles 2015].

Because there have been large-scale changes in the milk market related to the liquidation of the quota system in the EU, increasing production and consumption of milk and dairy products, and problems in logistic chains caused by COVID-19, the goal of the research paper is to check how the trade of milk and dairy products has changed.

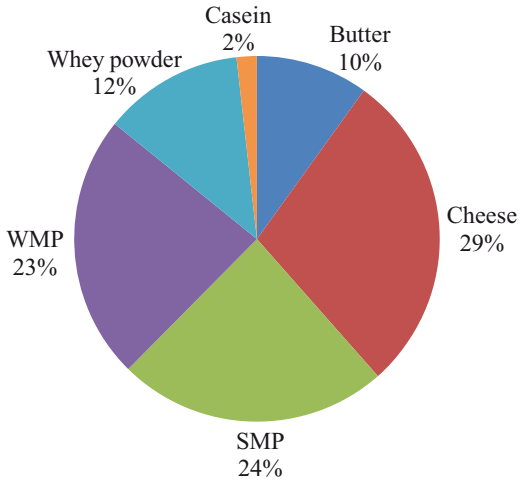

Fig. 1. The structure of world exports of dairy products in 2020

Source: Authors' own elaboration based on [OECD].

RESEARCH METHODS

The objectives of the research include: 1) evaluating milk and dairy product exports in 2020; 2) analyzing the volume of world exports of selected dairy products in the years 2000 to 2020. Data from the following sources was analyzed: Eurostat and FAOstat data, OECDStat data, OECD-FAO data, Statistical Office of the European Union – Eurostat data.

Data from 2020 was the main focus, with global export of selected dairy products from 2000–2020 presented in order to show the changes that have taken place in milk and dairy product exports over this period of time. The authors of the paper used graphic, tabular and descriptive methods to analyze the changes in data.

RESULTS

In 2020, over 11 billion kilograms of dairy products were exported worldwide (it was assumed that imports should be the same as exports in terms of global trade.) They were mainly powdered milk and cheese. Figure 1 shows a detailed breakdown in the export of individual products.

The volume of butter exports has hovered around 1 million tons per year for 20 years. A significant increase was recorded in the case of cheeses, where exports in the period 2000–2020 increased from 621 thousand tons to 3.17 million tons. The export of dairy powders also shows an upward trend, increasing over the last 20 years by 1.7 million tons for both Skim-Milk Powder (SMP) and Whole-Milk Powder (WMP). The export of whey powder increased by nearly 150% – from 555 thousand tons to 1.373 thousand tons. World exports of casein remains stable at the level of approx. 200 thousand tons per year. A graph of world exports of the above-mentioned dairy products over 20 years is shown in Figure 2.

The highest level of exports of dairy products (42% market share) was achieved by European countries in 2020 – exporting the most cheese, butter, skimmed milk powder and whey powder. The second place in the world among exporters of dairy products is occupied by the countries of Oceania – New Zealand and Australia, reaching a 30% market share. Oceania is the absolute leader when it comes to exporting whole milk powder (WMP). The countries of North America (USA, Canada) in 2020 achieved a nearly 14% share in the global export of dairy products, being the 2nd largest exporter of SMP in the world. The share of exporting countries from other continents is small and does not exceed 15%. The cumulative level of exports from individual continents is shown in Figure 3.

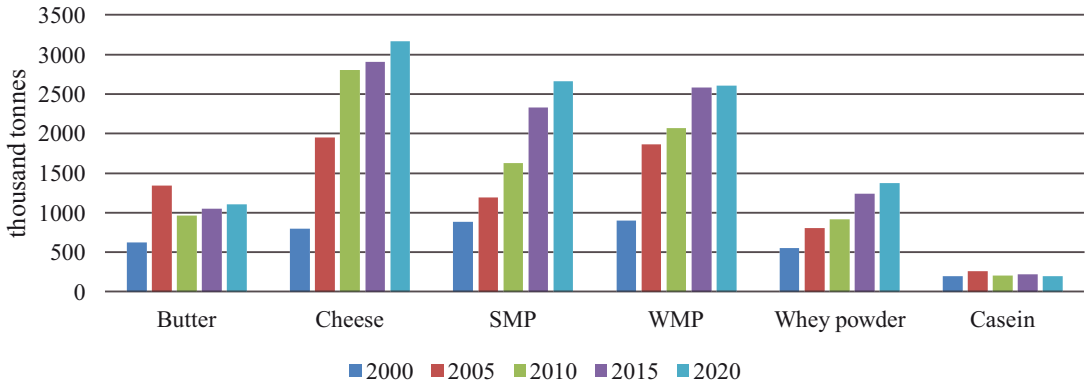

Fig. 2. The volume of world exports of selected dairy products in the years 2000–2020

Source: Authors' own elaboration based on [OECD]

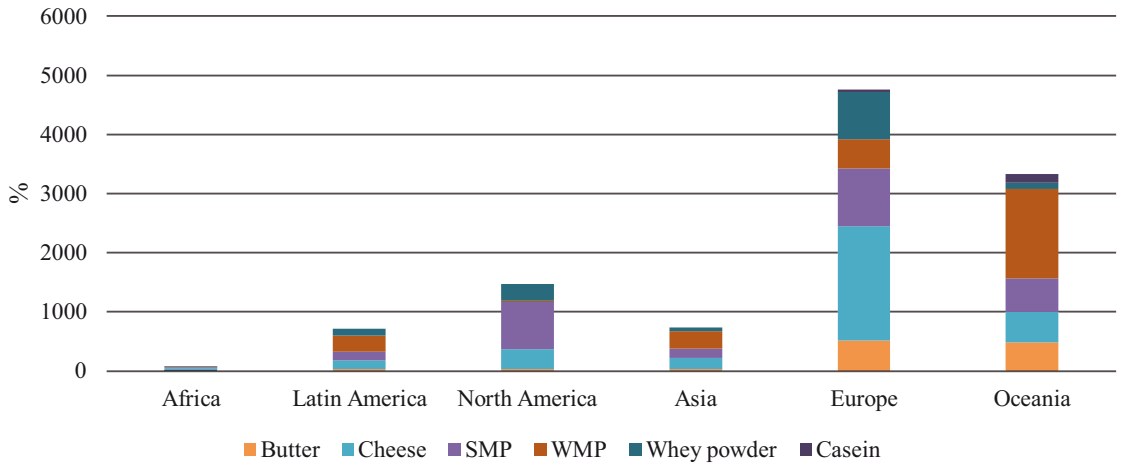

Fig. 3. Continental share of selected dairy products in the export market in 2020

Source: Authors' own elaboration based on [OECD].

Asia is the main importer of dairy products. In 2020, over 70% of whey and 60% of powdered milk (SMP and WMP) and nearly half of the butter exported in the world went to Asia. The largest amount of exported cheese also goes to Asia, although European countries are also large recipients. Casein powder goes mainly to the North American continent, where its only recipient is the United States. Figure 4 shows a graph of imported dairy products in the world in 2020.

The largest recipients of butter in 2020 on the Asian continent were: China (25% of all Asian imports), Saudi Arabia (11%) and Malaysia (5%). The most cheese was imported to Japan (24%), Korea (11%) and China (10%). Skimmed milk powder went mainly to China (18%), the Philippines (15%) and Indonesia (11%). Powdered whole milk also went to China in the greatest amount (35% of imports). Casein was imported only by the Japanese. Imports to the Oceania countries were negligible – in 2020, slightly over 100,000 tons of cheese and about 50,000 tons of butter and smaller amounts of powdered milk.

All the statistical information presented below – concerning both exports and imports of dairy products to and from European Union countries – comes from

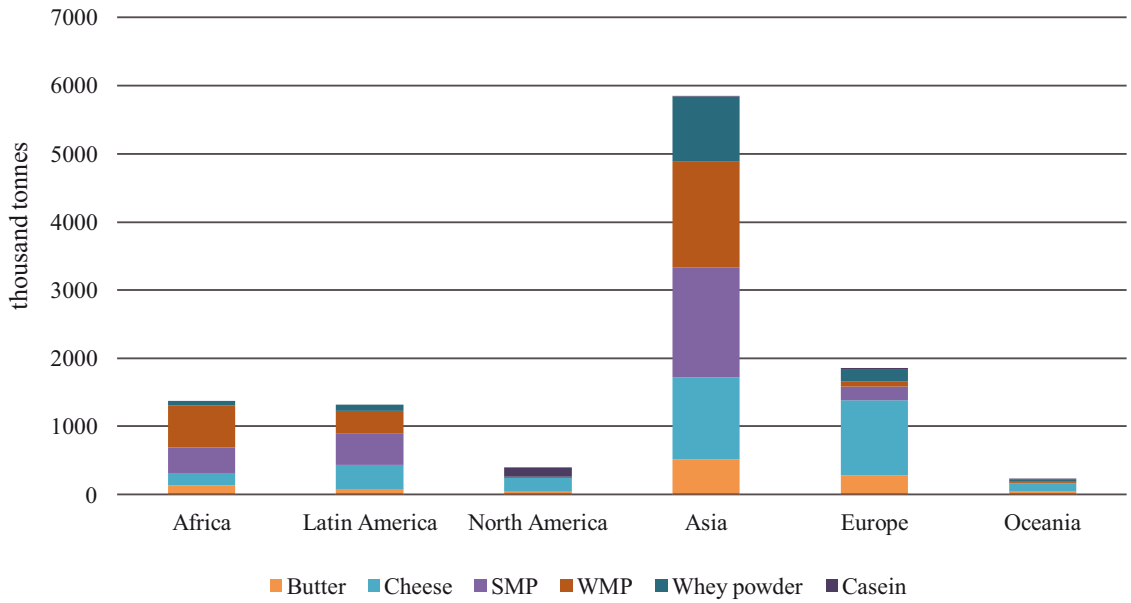

Fig. 4. The share in imports of selected dairy products in 2020 in continental terms

Source: Authors' own elaboration based on [OECD].

the collections of the Statistical Office of the European Union – Eurostat.

The EU is the largest exporter of dairy products in the world. Cheese is the main European dairy export – it accounts for nearly half of European dairy exports by weight. Powdered whey is the second item among dairy products shipped outside the EU. Skimmed milk powder was in third place with a 14% market share. The share of individual products in European exports is presented in Figure 5.

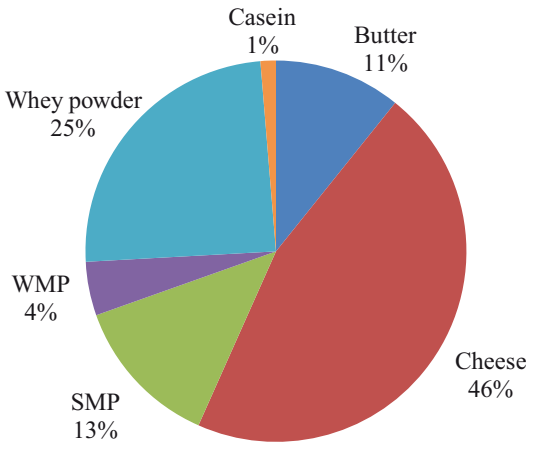

Fig. 5. Percentage share in the export of individual dairy products from EU countries in 2020

Source: Authors' own study based on [Eurostat].

Export

In the case of skimmed milk powder – in 2020 its largest suppliers to non-EU countries were: Germany, France, Belgium. Poland was 6th among European exporters of skimmed milk powder and had an 8% share in this market. The exported milk went in the largest quantities to Algeria, China and Indonesia. The EU countries are the biggest beneficiaries of liberalization of trade [Pawlak 2014].

The export of whole milk powder in 2020 was dominated by Dutch and German producers: the Netherlands in 2020 exceeded 18% share of the WMP export market, Germany slightly less at 17%. Other significant exporters of whole milk powder were Belgium, Italy and France. In 2020, Poland was on the 6th position of European exporters with a 7% market share. The main recipients of WMP in 2020 were Oman, Algeria and Nigeria. The market shares of major exporters are shown in Table 1.

The leader among European butter exporters is the Netherlands, which in 2020 exported over 330,000 tons of this product – thus realizing over a quarter of European deliveries. The next countries – in terms of the volume of butter exports – were Ireland, Germany and Belgium, which exported a total of over 600,000 tons of finished product. In 2020, Poland exported over 57,000 tons of butter, which puts it in 6th place among European sup-

Table 1. The share of individual EU countries in export (%)

Countries	The share of individual European Union countries in 2020 in the export of					
	skimmed milk powder	whole milk powder	butter	cheese	whey powder	casein
Germany	25	17	13	25	19	14
France	18	9	7	12	13	26
Belgium	14	14	12	5	7	–
Ireland	10	–	24	5	4	38
The Netherlands	10	18	27	17	11	6
Poland	8	7	5	5	8	6
Italy	–	14	–	9	12	–
Denmark	–	–	4	7	–	–
Other countries	15	22	8	15	26	10

Source: Authors' own study based on [Eurostat].

pliers. The exported butter went mainly to the USA, Saudi Arabia and China.

The cheese market is the largest item in global dairy exports. This applies also to countries of the EU, where of all dairy products, it was cheeses that were exported the most in 2020 – 5.3 million tons. The largest cheese exporter in Europe is Germany, which exported nearly 1.3 million tons in 2020. Significant exporters are also the Netherlands, France, Italy and Denmark. Poland is the 7th largest European exporter of cheese, reaching an export volume of 260 thousand tons in 2020. The largest quantities of cheeses intended for export in 2020 went to Japan, the USA and Switzerland.

Whey powder – due to the increasing popularity of whey proteins in human nutrition [Krol et al. 2011] – is beginning to play a significant position in global and European exports. In 2020, EU countries exported about 2.85 million tons of powdered whey, which is second by weight after cheese. The leader in whey exports was Germany, followed by France, which in 2020 sent nearly 370 thousand tons of powdered whey to third countries. Italy exported slightly over 350,000 tons of whey in 2020, and the Netherlands approx. 300 thousand tons. Poland, with an 8% market share, was in fifth place among exporters of this raw material. The largest recipient of whey was China (over 225 thousand tons), followed by Indonesia and Malaysia.

Casein powder accounts for a small share in the export of dairy products, amounting to approximately 1.3% of the total surveyed dairy exports from the EU. The entire export volume in 2020 amounted to 150 thousand tons, of which more than one-third was exported by Ireland.

The following goods are traded in France, Germany, the Netherlands and Poland.

IMPORT

Among imported products, the first place is cheese with 49% market share. The remaining 51% of imports include the import of whey (approx. 27%), butter (approx. 12%), powdered milk – SMP 8%, WMP 3% and casein (approx. 1%). The details are shown in Figure 6.

In 2020, the import of skimmed milk powder to the EU amounted to approx. 700 thousand tons and was two times smaller than its export. The largest importer was the Netherlands, followed by Belgium, Italy, Germany and Spain. In 2020, Poland was the 6th importer of SMP among the EU countries with a 7% share in imports.

Whole milk powder imported in 2020 was mainly delivered to the Netherlands, Germany, Belgium and Italy. Some quantities were also imported by France and Poland (about 15,000 tons). In 2020, WMP imports amounted to a total of approx. 220 thousand tons and was lower than the export of this raw material by 150%. The share of individual European

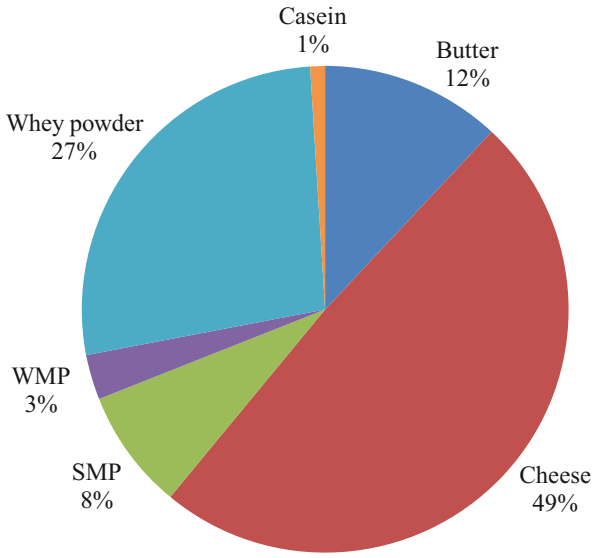

Fig. 6. Share of individual dairy products in imports to the European Union in 2020

Source: Authors' own studies based on [Eurostat].

countries in the import of whole milk powder is shown in Table 2.

The import of butter to EU countries in 2020, due to the COVID-19 coronavirus pandemic, decreased significantly (by nearly 100%) compared to previous years. From the largest supply corridors so far – New Zealand decreased by over 80%, America by 40%, and Ukraine decreased from over 3.5 million tons in 2018 to 5,000 tons in 2020. In 2020, more butter was imported by France, Germany, the Netherlands, Belgium and Italy. Poland was eighth among European butter importers with a 2% market share. The detailed share of EU countries in the import of butter in 2020 is shown in Table 2.

In Europe, cheese is the dairy product traded the most – both in exports and imports. This is because cheese is a durable product (hard cheeses) with by far the largest number of product grades, and it is a product that Europeans are increasingly consuming. Hence, suppliers from third countries are trying to reach European countries with their cheeses, thus generating imports. The main cheese suppliers to the EU are Switzerland, Serbia, and Norway. The total import of cheese to the EU in 2020 amounted to over 4.1 million tons.

Among the European countries, the leaders in cheese imports are Germany and Italy (they purchase nearly one-third of the cheeses imported to Europe). Smaller quantities of cheese (approx. 400 thousand tons per year) are imported by France, the Netherlands and Belgium. The share of other European countries in the import of cheese does not exceed 15% per year.

Table 2. The share of individual EU countries in import

Countries	The share of individual European Union countries in 2020 in the import of					
	skimmed milk powder	whole milk powder	butter	cheese	whey powder	casein
Germany	10	17	19	21	27	24
France	5	9	20	10	11	5
Belgium	12	14	13	9	5	7
The Netherlands	27	18	18	9	24	15
Poland	7	7	–	–	4	13
Italy	11	13	6	12	5	12
Denmark	–	–	–	–	6	–
Spain	10	–	–	7	–	10
Sweden	–	–	–	3	–	–
Austria	–	–	–	3	–	–
Greece	–	–	–	3	–	–
Other countries	19	22	24	23	18	14

Source: Authors' own study based on [Eurostat].

Whey – once treated as post-production waste in the production of cheese and curd and directed mainly as animal feed – has now been rediscovered as one of the best-absorbed proteins for humans. Its large presence on the market is also a direct result of the constantly growing cheese production. In 2020, EU countries imported over 2 million tons of powdered whey. The largest importers are Germany and the Netherlands. Poland ranks 7th among whey importers with a 4% market share.

Casein and caseinates powder are products that have many different uses. They are used to enrich the nutritional value of food, as an ingredient in dietary products and as a functional additive in the meat, delicatessen, confectionery, bakery and pharmaceutical industries. Imports of casein powder to EU countries in 2020 is estimated at approx. 100 thousand tons. The main importers include Germany, the Netherlands and Poland.

An item which has not previously been presented, but which cannot be ignored, is the turnover of fresh milk and cream, which amounted to approximately 9.5 million tons in the case of export and over 9 million tons in import. Trade in fresh products is cross-border – Eurasian. The EU member states were supplied with milk from European countries that are not members of the EU (Norway, Switzerland, Belarus and Ukraine, Serbia and Montenegro) and Middle Eastern countries (Turkey, Israel). But at the same time, they also exported (depending on the economic situation) fresh dairy products. It should also be noted that the increased trade in fresh milk and cream was the result of trade between Ireland and Great Britain, before Brexit occurred.

CONCLUSIONS

In the case of dairy products, the most frequently exported (and thus imported) are dried powdered products (whole milk powder (WMP) and skimmed milk powder (SMP), whey, whey protein concentrates, casein). Cheese and butter are also traded internationally. Fresh dairy products are a minor part of international trade, but their market share is growing [Parzonko 2013], mainly due to new technologies to extend the shelf life of products, such as UHT.

The largest exporters of milk and dairy products in the EU are Germany (nearly a quarter of European milk and cream exports) as well as France, Bulgaria, Belgium and Poland, which generate exports of up to 1 million kilograms per year.

The EU countries are in second place among the world importers of dairy products, but these imports are smaller than exports – which means that the EU has a positive balance of trade in dairy products. This surplus in 2020 amounted to approx. 40%.

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HANDEL ZAGRANICZNY MLEKIEM I PRODUKTAMI JEGO PRZEROBU W UNII EUROPEJSKIEJ

STRESZCZENIE

Celem artykułu było przedstawienie handlu zagranicznego mlekiem i produktami mleczarskimi w UE. Szczególną uwagę zwrócono na eksport i import mleka i przetworów mlecznych w UE i na świecie. Do analizy zmian w handlu wykorzystano metody graficzne, tabelaryczne i opisowe. Analiza handlu zagranicznego dotyczy głównie 2020 roku, a światowy eksport wybranych produktów mleczarskich analizowano w latach 2000–2020. Badanie wykazało rozwój handlu mlekiem i produktami mleczarskimi w krajach UE i na świecie. Taka sytuacja jest wynikiem zwiększonego zapotrzebowania na mleko i skali produkcji.

Słowa kluczowe: handel zagraniczny, mleko, kraje UE