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**TOMASZ WIERZEJSKI<sup>1</sup>**

University of Warmia and Mazury in Olsztyn, Poland

**INTERNATIONALIZATION OF THE DAIRY SECTOR  
IN POLAND DURING THE COVID-19 PANDEMIC**

Key words: food economy, dairy sector, Covid-19 pandemic, internationalization, foreign trade

**ABSTRACT.** The aim of the study has been to evaluate the active internationalization of the dairy sector in Poland during the Covid-19 pandemic. The restrictions that were system-wise imposed globally since early 2020 created new conditions for the functioning of markets, also in the international dimension. As a result, production, logistic and consumption processes were considerably altered. The research subject was the dairy sector, which is an important link in the Polish food economy. The study covered years 2020-2021, showing the changes relative to the previous time periods. The literature perusal and analysis of the statistical data concerning the Polish foreign trade enabled us to confirm the hypothesis that food markets, including the dairy sector, are an important anchor of the Polish economy in times of crisis. The strong position of the Polish dairy products on international markets was maintained and even strengthened at the end of the researched period. A relatively high degree of the geographical diversification of the internationalization of the dairy sector compared to the whole agricultural and food sector was observed. It can be expected that the business solutions developed during the pandemic will additionally reinforce enterprises from the dairy sector in the future.

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<sup>1</sup> Corresponding author: tomasz.wierzejski@uwm.edu.pl

## INTRODUCTION

The Covid-19 pandemic, which broke out at the end of 2019 in China, began to spread globally, also across Europe, in the beginning of year 2020. Decisions of the state governments on lockdowns in socio-economic life spheres quite soon began to cause problems in economy. Turbulences in the production and consumption spheres were becoming increasingly severe. Logistics, also on the international scale, became another significant issue. Consequently, changes on markets occurred, including the shortage of some products or decreased demand for other products. In such circumstances, one might have expected significant changes in many spheres of economy, also in the food sector. However, the major sectors which were the first to be struck by the restrictions imposed due to the Covid-19 pandemic, were passenger transport, hospitality business, manufacture of motor vehicles, petrochemical industry and broadly understood medical sector [Bhandari, Ravishankar 2020]. Considering the fact that the agricultural and food sector provides essential goods, including dairy products, it is particularly important to ensure the market availability of these products. However, numerous difficulties in the production and logistic processes were likely to appear, also in the international dimension, under such specific socio-economic conditions [Karwasra et al. 2021]. Internationalization of economies is their permanent trait in the face of globalization of markets and societies. This study took into account active internationalization, which is characterized by the active attitude of domestic enterprises present on international markets [Gorynia 2021]. The dairy industry is one of the major sectors in the Polish food economy, in terms of both production and international trade. Poland's accession to the European Union, and consequently its dairy market being subjected to the EU law, had a significant effect on the way this sector developed and on trade connections with the EU market [Bórawski et al. 2019]. In 2004-2018, the development of the dairy sector in Poland was more distinctly dependent on export than on the domestic consumption. Consumption of main dairy products in Poland decreased or stayed on a relatively stable level, while exports grew steadily [Wierzejski et al. 2020]. The modernization of the production infrastructure in the pre-accession years and later on, as well as the business experience gained on the demanding international market are fundamental to the current results of the dairy sector and to its stable development in the future.

The research objective of this study was to try and determine the degree of internationalization of the dairy sector in Poland during the Covid-19 pandemic in years 2020-2021. The high and growing share of the agricultural and food sector in the internationalization of the Polish economy before the pandemic and the large contribution of the dairy sector in this process attest to the importance of this research problem in the development of the country's economy, especially in times of crisis.

## RESEARCH MATERIAL AND METHODS

The research problem was the active internationalization level achieved by the dairy sector in Poland, expressed by the volume of exports. Foreign trade plays a dominant role in the internationalization of the Polish agricultural and food sector, hence it is a proper measure to evaluate the degree of its internationalization [Wierzejski 2010]. The internationalization of the dairy sector was evaluated on the basis of data from years 2020-2021, when the Covid-19 pandemic caused adverse effects on the functioning of markets on the national, regional and global scale. The results obtained in this study were referred to research conducted in earlier years.

The first step of this study consisted of an analysis of the subject literature. Next, the statistical data published by Statistics Poland (GUS), National Support Centre for Agriculture (KOWR), Food and Agriculture Organization of the United Nations (FAO), and regarding the production, volume, structure and geographical diversification of foreign trade, for both dairy products and the entire agricultural and food sector, were gathered and processed. The statistical database of Eurostat and World Trade Organization (WTO) served as a source of macroeconomic and world trade data. The collected data were ordered in time series, dynamics indices were calculated and basic statistical analyses were made. The results were presented in tables and diagrams. Also, a comparative analysis was made, where the values concerning the internationalization of the dairy sector were referred to the analogous data for the whole agricultural and food sector.

Since Poland's accession to the European Union, the agricultural and food sector in Poland has been an important contributor to the internationalization of the Polish economy [Pawlak, Poczta 2021]. In the past ten years, its share to total exports has ranged from 11.6 to 14.3%. Moreover, it is one of the few national economy sectors which has consistently generated a positive trade balance since 2004 (Figure 1). Given the relatively high indicator of the openness of the Polish economy (measured by the share of export in Poland's GDP), which was over 50% in 2021, the importance of the food sector is considerable. Noteworthy, it has maintained its strong position also during the current slowdown of economy, which means that it is an important anchor stabilizing the Polish economy [Wierzejski 2012]. This was manifested clearly in 2020, when the share of the agricultural and food sector in the total Polish exports reached a record high value of 14.3%. In the first quarter of 2020, there was an evident decrease in the dynamics of the Polish export, which increased by just 1.7% relative to the first quarter of 2019. Meanwhile, the exports of agri-food products rose by nearly 10%, and the trade balance improved by 11% [Szajner 2020]. Thus, in the face of socio-economic destabilization, states with a firm international position of the food economy have a better chance of avoiding severe decreases in the main macroeconomic indicators, including recession.

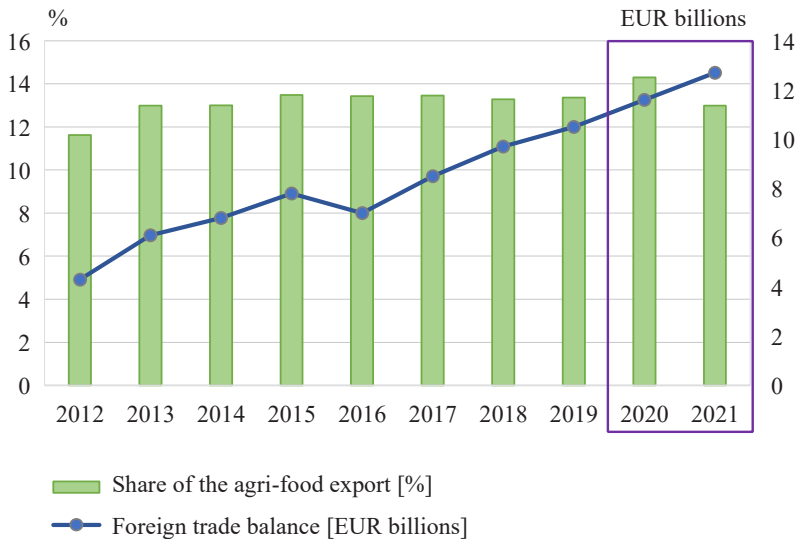


Figure 1. Position of the export of agri-food products in Poland's foreign trade  
Source: own calculations based on [GUS 2012-2020]

The dairy sector is a very strong branch of the Polish food economy, both in the domestic and international dimensions [Bórawski et al. 2022]. The natural conditions and the tradition of cattle rearing are favorable for the development of the dairy industry in Poland, while the accession to the European Union and consequently entering the Common Agricultural Policy gave this industry an additional stimulus for development. Before the outbreak of the Covid-19 pandemic, in 2019, the value of commodity milk production was PLN 16.1 billion, and its share in total commodity agricultural production reached 17.8% [KOWR 2021]. In the same year, the value of dairy products exported from Poland was EUR 2.29 billion, which was a record high result in the history of the Polish foreign trade in this group of products. The share of this sector in the export of agri-food products in total equaled 7.2% (Figure 2). Poland became the fourth largest milk producer in the European Union, and the twelfth one in the world, having a 2% share in the global milk production [FAO 2022].

The beginning of year 2020 was the time of increasingly more restrictive laws imposed on the socio-economic life in European countries due to the Covid-19 pandemic. Lockdowns in national economies indirectly caused reductions in production and deteriorated macroeconomic indicators. Poland's GDP in 2020 decreased by 2.2% [GUS 2022]. In all the European Union, GDP decreased by 5.9%, which was a greater decline than in 2009 (-4.3%), during the global financial crisis [Eurostat 2021]. Statistics pertaining

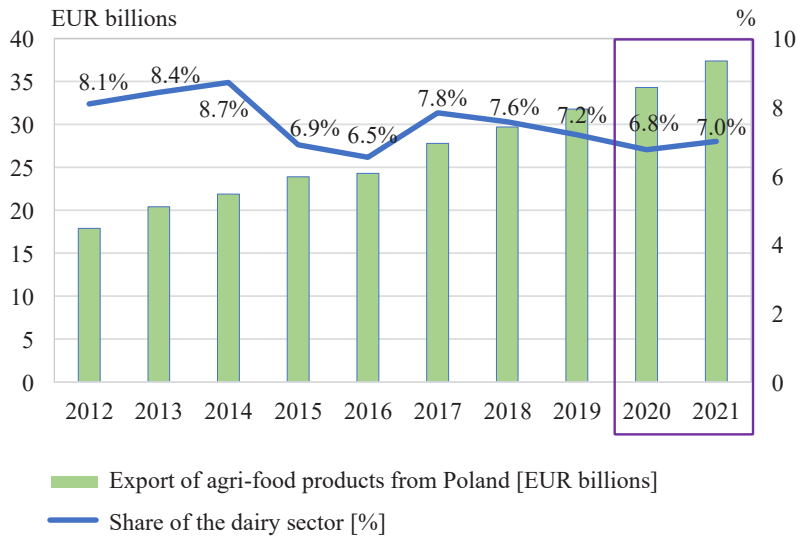


Figure 2. Share of the dairy sector in the exports of agri-food products from Poland  
Source: own calculations based on [GUS 2013-2022]

to foreign trade in 2020 also demonstrated a decreasing trend. The global trade of goods and services decreased by 12% relative to year 2019, and this decline mostly affected the services sector, whereas the trade of goods fell by 5.3% [WTO 2021]. Nevertheless, this indicator's value was relatively small because of Asian countries being affected to a lesser extent, as Asia had already been affected by the pandemic in 2019. In terms of commodities, it needs to be highlighted that year 2020 recorded an increase in the global trade volume of food products. The value of these products exported from the European Union, one of the biggest food exporters in the world, was 1.4% higher in 2020 than in 2019. As a result, the share of food trade in total trade of commodities in the world, same as in Poland, increased.

The foreign trade of dairy products in 2020, same as that of the whole agri-food sector, remained on a high level. There was a small increase in export (from EUR 2.29 to 2.32 billion) and in import (from EUR 1.08 to 1.1 billion), while the positive trade balance was maintained at EUR 1.21 billion. In 2021, a high increase in the value of the products sold abroad was noted – by EUR 300 million up to a record high level of EUR 2.26 billion. Because the increase in the value of imported products was lower, the value of the trade balance increased, reaching EUR 1.32 billion (Figure 3). In the structure of exported goods, hard cheeses and cottage cheeses have been a dominant group of products for many years. At the end of the time period analyzed, the export of these dairy products reached

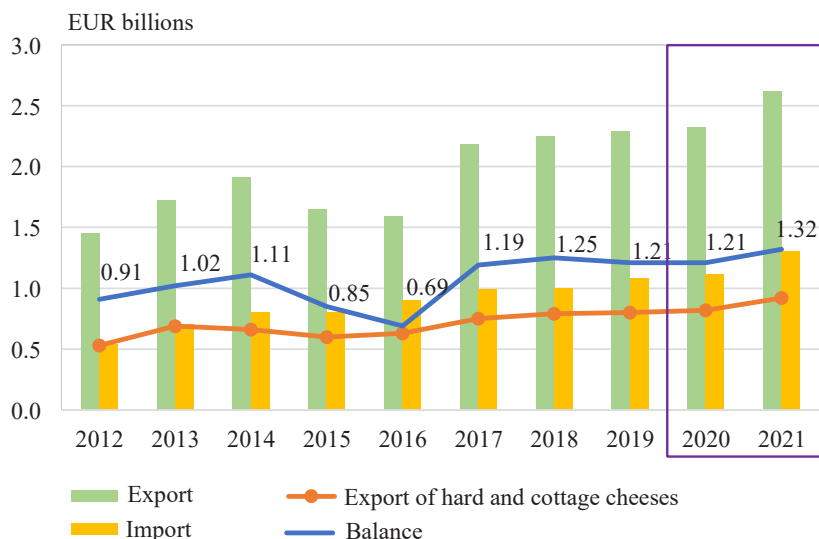


Figure 3. Polish foreign trade in dairy products

Source: the author, based on [KOWR 2022a]

EUR 0.92 billion, corresponding to 35% of the entire sector. Other important exported dairy products were liquid milk and cream (about 19%), condensed and powdered milk (around 13%), and butter and milk fats (around 10%).

The geographical structure of the export of dairy products from Poland was dominated by the European Union, which purchased 66% in 2021 and 63% in 2022 of dairy products Poland sold abroad. The main buyers were Germany (19%), the Czech Republic (7%), Italy and the Netherlands (5% each). Other important business partners were the UK (5%), and more distant countries such as China (5%) and Algeria (4%) [KOWR 2022a]. It should be added that the export of Polish dairy products to Ukraine was worth EUR 123 million in 2021, but this amount can be expected to have decreased considerably in 2022 due to the outbreak of the war. Noteworthy is the fact that before the onset of the pandemic, the share of the EU countries in the Polish exports was much higher, and reached 74% in 2019. An analysis of the entire food sector demonstrated a much stronger concentration on the EU market, with 81% in 2019 and 80% in 2020. This implicates a much higher geographical diversification of the internationalization of the dairy sector.

The analysis of the dynamics of the dairy sector's active internationalization in Poland reveals variation in values achieved by the foreign trade. Following a highly dynamic growth of exports of dairy products in 2013-2014, the two subsequent years witnessed a decrease in this parameter. In 2015, regulations governing the milk market in the

Table 1. Dynamics of the Polish foreign trade in dairy products

Specification	Dynamics of the Polish trade [%]								
	2013	2014	2015	2016	2017	2018	2019	2020	2021
Export	18.6	11.0	-13.6	-3.6	37.1	3.2	1.8	1.3	12.9
Import	29.6	14.3	0.0	12.5	10.0	1.0	8.0	2.8	17.1
Balance	12.1	8.8	-23.4	-18.8	72.5	5.0	-3.2	0.0	9.1

Source: own calculations based on [KOWR 2022a]

European Union were amended, e.g. milk quotas were abolished, and this gave rise to certain market-related consequences, also in international trade [Pouch, Trouve 2018]. In 2017, the export rose by a record-high percentage (37.1%), and afterwards its value became relatively stable. In the first pandemic year, the increase was marginal, but the value of exported dairy products was higher by 1/8 in 2021.

Analogous changes were observed for the balance in trade. The evident decrease in the positive balance in years 2015-2016 was compensated for in 2017, when it increased by as much as 72.5%. In 2020, the balance did not change relative to the previous year, but increased again, by 9.1%, in 2021 (Table 1).

According to the data for the first five months of 2020, values achieved by the foreign trade in both the agri-food sector and in the dairy sector alone demonstrated a further considerable increase. In comparison with the analogous period in 2021, the dynamics of growth for the entire sector reached 21.9%, while peaking at 39% for the dairy sector [KOWR 2022c]. In consequence, the dairy sector strengthened its position in the active internationalization of the Polish food economy.

## SUMMARY

The above study has substantiated a few conclusions. First, it should be emphasized that the agri-food sector has maintained for years its strong position as a contributor to the internationalization of the Polish economy, and the dairy sector is its strong link. This trend did not falter during the Covid-19 pandemic, and the dairy sector even fortified its previous position. Both the entire agriculture and food sector and dairy products recorded a positive balance in foreign trade, which at the end of the analyzed time period amounted to EUR 12.7 and 1.3 billion, respectively. Another conclusion which can be supported by the current research results is the relative strengthening of the international position of the agri-food sector and its branches, compared to other sectors of economy, during an economic crisis. In 2020, characterized by the economic slowdown all over the world and weaker

global trade, the value of exported dairy products remained high and even increased a little. A similar phenomenon was observed during the global financial crisis in 2009. Consequently, an economy with a relatively large contribution of the agri-food sector to the creation of the country's GDP and its strong position on foreign markets allows for milder socio-economic consequences of a crisis or recession. In 2021, when market players had adjusted to the new conditions, a dynamic growth in the value of exported goods was observed, alongside an increase in the positive trade balance to a record-high level. These findings substantiate formulating a preliminary hypothesis, such that both the competitiveness of dairy products from Poland and the organizational adaptation systems of enterprises in this sector should be given a positive assessment. However, this hypothesis requires further investigations. In this study, it has been demonstrated that internationalization of the sale of dairy products from Poland in 2020-2021, against the background of the whole agri-food sector, was distinguished by a higher degree of geographical diversification – and was less concentrated on the EU markets. This again inclines one to evaluate positively the international position of the dairy sector in Poland, and proves its relatively higher resilience to potential demand shocks on selected foreign markets.

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## INTERNACJONALIZACJA SEKTORA MLECZARSKIEGO W POLSCE W WARUNKACH PANDEMII COVID-19

Słowa kluczowe: gospodarka żywnościowa, sektor mleczarski, pandemia Covid-19, internacjonalizacja, handel zagraniczny

ABSTRAKT. Celem badań była ocena czynnej internacjonalizacji sektora mleczarskiego w Polsce w okresie pandemii Covid-19. Ograniczenia, które systemowo były wprowadzane globalnie od początku 2020 roku, stworzyły nowe uwarunkowania funkcjonowania rynków, również w wymiarze międzynarodowym. W efekcie znaczącym zmianom uległy procesy produkcyjne, logistyczne i konsumpcyjne. Przedmiotem badań był sektor mleczarski, który stanowi ważne ogniwo w polskiej gospodarce żywnościowej. Badaniami objęto dane za lata 2020-2021, wskazując na zmiany w odniesieniu do poprzednich okresów. Studia literaturowe i analiza danych statystycznych dotyczących polskiego handlu zagranicznego pozwoliły potwierdzić hipotezę, że rynki żywnościowe, w tym sektor mleczarski, stanowią ważną kotwicę polskiej gospodarki w warunkach kryzysowych. Utrzymana została silna pozycja polskich produktów mleczarskich na rynkach międzynarodowych, a na koniec okresu badawczego uległa ona nawet umocnieniu. Zaobserwowano również relatywnie wysoki stopień dywersyfikacji geograficznej internacjonalizacji sektora mleczarskiego na tle całego sektora rolno-spożywczego. Można oczekiwać, że wypracowane nowe rozwiązania biznesowe w okresie pandemii dodatkowo wzmocnią przedsiębiorstwa z sektora i uczynią je bardziej odporne na ewentualne wyzwania rynkowe w przyszłości.

AUTHOR

TOMASZ WIERZEJSKI, PHD

ORCID: 0000-0003-1185-5197

Faculty of Economic Sciences

Department of Market and Consumption

e-mail: tomasz.wierzejski@uwm.edu.pl

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