INTERNATIONALIZATION OF THE BUTTER MARKET

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Abstract

The aim of the paper was to define geographic scope of internationalization the butter market based on Elzinga–Hogarty method. Using secondary data (Food and Agriculture Organization, Institute of Agricultural and Food Economics) were find that the butter market is international in the scope, and this scope is evolving from country to semi-global and next to regional. Butter market consists only of 11th EU countries in 2014. Such market has production of 3361 thousand tones, consumption of 3292 thousand tones and export and import at the level of 317 thousand tones, 238 thousand tones, respectively.

Keywords: delineation of geographic scope, internationalization, butter market, Elzinga–Hogarty method.

JEL codes: D4, F15, K21, L66.

Introduction

Internationalisation is a complex phenomenon which can be analysed at various levels and in various dimensions: economic, scientific, political and legal, socio-cultural (Müller, 2003), and taking into account different perspectives (Daszkiewicz and Wach, 2012). As part of economic sciences, internationalisation can be considered at three main levels: on a macro scale (internationalisation of economies), meso scale (internationalisation of sectors/markets) and micro scale (internationalisation of enterprises) (Witek-Hajduk, 2010). The literature emphasises that internationalisation at all levels is a function of the motives and inclinations of enterprises for foreign expansion, including investing in development outside the home country, as well as for cooperation with foreign partners in other forms (Oczkowska, 2007). The majority of
contemporary publications and scientific research carried out focused on the micro level, i.e. the internationalisation of enterprises, while there are only a few studies regarding the analysis of the internationalisation of sectors.

Despite the multitude of theories and models explaining internationalisation, there is no approach which would comprehensively explain this phenomenon. On the basis of the literature review, several takes on defining internationalisation emphasising a different element can be distinguished.

In the first group of definitions, internationalisation is perceived as a sequential process, occurring in stages, in which an enterprise moves from activity on the domestic market to operations on foreign markets (Daszkiewicz, 2017). The gradual increase in such extension of operations is often explained by the gradual acquisition of knowledge about foreign markets. This approach to internationalisation is presented, e.g. by Swedish scientists, creators of the Uppsala model – Johanson and Vahlne (1977), as well as Welch and Luostarinen (1988), Melin (1992), Przybylska (2005) and Fonfara (2009).

In the second group of definitions, the most important factor of internationalisation are business connections (networks) between enterprises on the international market. This approach can be seen, for instance, in the definitions of: Johanson and Mattsson (1993), Johanson and Vahlne (2009), Nowakowski (2005) and Pierścionek (2011).

The third approach to internationalisation connects the internationalisation process with the involvement of resources of the enterprise/sector (including capital and human resources) in the activity abroad – this approach is supported by the definitions of Andersen (1997), Ahokangas (1998), Duliniec (2004).

Another approach equates internationalisation with various forms of internationalisation of an enterprise. The literature presents active and passive forms of entry into foreign markets (Duliniec 2004). Active internationalisation is one associated with foreign expansion of the enterprise. In turn, passive internationalisation occurs when enterprises build connections with foreign companies without operating outside the home country. Forms of internationalisation include: export, import, sale of licences, franchising, leasing, foreign production/commercial branch, joint venture and strategic alliance with a foreign partner, etc.

Some researchers treat internationalisation as part of a strategic process where decisions should be made regarding the selection of target markets, forms of entering foreign markets, time and scale of the entry, as well as the scope of resources involved (Andersen and Buvik, 2002; Hill, 2013).

Many researchers also define the internationalisation process as an extension of the geographic scope of markets, products and forms of activity. An enterprise/sector covers new geographical areas with its activity, changing from the national scope through international to global (Rymarczyk, 2004; Dulieciec, 2004; Strzyżewska, 2005; Gorynia, 2007).

According to the sequential theories of internationalisation, the measurement of internationalisation at the market/sector level should take into account two dimensions: intensity and geographic scope (Hollensen, 2004). The intensity of
internationalisation determines the degree of involvement of a given sector in the relations with foreign markets within various forms (inter alia, trade, contractual and investment) (Daszkiewicz and Wach, 2013). In turn, the second dimension concerns determining the geographic scope of expansion of a given sector as part of various actions.

The internationalisation process can be analysed using quantitative and qualitative methods. The quantitative methods of measuring internationalisation include, above all, indicators dedicated to measuring the intensity and/or spatial aspects of internationalisation. Mainly three indicators are used within this group: the Transnationality Index – TNI (UNCTAD, 1995), the TASi (Ietto-Gillies, 1998) and the degree of internationalisation – DOI (Sullivan, 1994). However, these are indicators dedicated to the assessment of internationalisation at the level of enterprises, not markets. In turn, methods which can be used to determine the spatial dimension of internationalisation at the sector level are those based on the movement of goods, e.g. the Elzinga–Hogarty method (1973, 1978), the Sleuwaegen (1994) concept and the concept of Makhija, Kim and Williamson (1997). The qualitative methods of measuring the foreign expansion of sectors include, among others, the concept of Porter (1998), Yip (2004), Lassere (2003), Stonehous, Hamill, Campbell and Purdie (2001) as well as Pietrzak (2014).

Studies of internationalisation within the framework of this are carried out at the market level. It should be noted that two concepts related to defining the market emerge from the literature on the subject – one concerns the supply side and the other the demand side (Gorynia, Jankowska and Maślak, 2000; Jankowska, 2005; Gorynia and Łaźniewska, 2010; Pietrzak 2014). There are also approaches which take into account both the demand and supply side of the market, as well as emphasising the importance of the third dimension – spatial (geographical area, territory, geographic scope) as a complement to the market definition (Wrzosek, 1998; Kotler, 2005; Stanton, 1981; Pietrzak, 2014). As part of this research, it was assumed that the market is defined taking into account the following three dimensions: 1. supply, i.e. sellers offering products with a high rate of substitution, 2. demand, i.e. buyers with specific needs, 3. geographical area.

The problem of defining the geographic scope of the butter market was raised in the works of Roman (2016, 2017), Pietrzak and Roman (2018). However, these studies concern only 2013 and 2015, and it is not possible to indicate the directions of changes in the geographical expansion of the market in butter on their basis, which in turn is important for identifying the course of the internationalisation process. Therefore, the objective of this article is to determine, using the Elzinga–Hogarty method, changes in the geographic scope of internationalisation of the butter market in Poland in 1990-2014. Taking 1990 as the beginning of the analysis was related to the beginning of major changes in the dairy sector resulting from the system change in Poland. The analysis ends on 2014 due to the fact that the most up-to-date data in the databases of the Food and Agriculture Organisation of the United Nations (FAO) regarding production of butter at the time of calculations was available for this year.
Research methodology

The Elzinga–Hogarty method was used to determine the spatial dimension of internationalisation of the butter market. Using the movements of goods, the Elzinga–Hogarty method reflects shifts in demand and supply between areas. It is based on the verification of two tests – the LOFI (Little-Out-From-Inside) and the LIFO (Little-In-From-Outside) (Elzinga and Hogarty, 1973; Elzinga and Hogarty, 1978; Elzinga, 1981). The calculation method for these tests is shown in formulas 1 and 2. Positive verification of the LOFI test means that a given geographic area can be considered a single market, as companies located on this market have only a small part of their turnover outside its area. In turn, positive verification of the LIFO test means that the analysed market is a separate geographic market, and it occurs when only a small part of the product consumed on a given geographic market is imported from an external area.

\[
LOFI = \left[ \frac{\text{production-\text{export}}}{\text{production}} \right] \times 100\% \tag{1}
\]

\[
LIFO = \left[ \frac{\text{consumption-\text{import}}}{\text{consumption}} \right] \times 100\% \tag{2}
\]

Therefore, the geographic market is defined as the smallest area where the percentage of deliveries of a given product – both from the outside and targeted at the outside – is small. The authors of the method define given market as strongly (clearly) separated when the LOFI and LIFO values are simultaneously at least 90%. Therefore, it was assumed that the LOFI and LIFO tests must be met at the level of 90% (“strong” market). If at least one of the tests is below the assumed criterion, the area of a given market should be increased by “adding” markets (countries) until reaching the indicated percent thresholds for both tests, at the same time (Roman, 2016; Pietrzak, Roman and Mucha, 2016a,b). The butter market in Poland was the starting point for the analysis. This market concerned cows’ milk products covered by the customs nomenclature code 040510, not including dairy spreads. Data of the FAO and the Institute of Agricultural and Food Economics – National Research Institute (IERiGZ-PIB) was the source of research materials.

Research results

Table 1 presents the results of the LOFI and LIFO tests for the market in butter with reference to 54 countries for selected years from the period of 1990-2014. The analysis carried out indicates that the maximal domestic scope of the butter market in the analysed years was demonstrated by countries from North America (the USA and partly Canada) and some countries from Asia (Korea, Turkey, Japan), in Europe such a scope was identified only in Switzerland. South America, Colombia and since 2005 also Brazil were characterised by maximal domestic scope.
of the butter market. The lack of detailed data at a lower level than domestic makes it impossible to verify whether maybe in one of the above-mentioned countries the butter market had, for example, local character.

In the case of the butter market in Poland, it was observed that in 1990, 1995 and 2000 it was a market of a domestic scope, and after 2005 the geographic scope of the market was wider than domestic (Table 1). This was influenced by Poland’s accession to the EU and greater access to the foreign market and as a result in 2005 about 20% of the butter produced was sold outside the domestic market, while in 2000 only 2%.

Based on the secondary data of IERiGŻ-PIB, the analysis of the scope of the butter market in Poland in 1991-2014 was carried out. Table 2 presents the results of partial LOFI and LIFO tests for Poland together with their interpretation. “YES” means that both tests simultaneously indicate the result at least at the level of 90%, and “NO” that the result of at least one of the tests is below the required threshold allowing to recognise the area of Poland as a geographic market for a given product within the meaning of the Elzinga–Hogarty method. It was found that from 1994 to 2003 (excluding 2001), the butter market in Poland was a separate geographic market with a domestic scope. In 2004-2014, the LOFI test was not met which means that companies operating on the butter market in Poland made over 10% of their turnover outside this market. And since 2010 the LIFO test also has not been met which means that more than 10% of butter consumed in Poland was imported from outside.

In connection with the above, taking the butter market in Poland as a starting point, its geographic scope in 2005 and 2014 was determined based on the Elzinga–Hogarty method. The market in butter was increased by “adding” successively the country with which the largest trade was conducted until reaching 90% in both LOFI and LIFO tests. Tables 3 and 4 present a step-by-step order of adding countries forming in total the butter market in 2005 and 2014, defined according to the Elzinga–Hogarty method.
Table 1

*The LIFO and LOFI tests related to the butter market in selected countries of the world*

| Country       | 1990 | 1995 | 2000 | 2005 | 2010 | 2014 |
|---------------|------|------|------|------|------|------|
| Austria       | 97   | 99   | 95   | 94   | 92   | 85   |
| Belgium       | -15  | -18  | -43  | -52  | 6    | 6    |
| Belarus       | b.d. | b.d. | 76   | 98   | 74   | 100  |
| Bulgaria      | 100  | 82   | 96   | 72   | 100  | 53   |
| Croatia       | b.d. | b.d. | 89   | 93   | 70   | 66   |
| Czech Republic | 90   | 97   | 63   | 100  | 65   | 98   |
| Denmark       | 46   | 82   | 11   | 21   | 12   | 19   |
| Estonia       | b.d. | b.d. | 15   | 35   | 38   | 67   |
| Finland       | 41   | 100  | 64   | 98   | 43   | 99   |
| France        | 82   | 86   | 81   | 73   | 84   | 72   |
| Greece        | 97   | 38   | 97   | 33   | 99   | 41   |
| Spain         | 93   | 89   | -3   | -14  | 52   | 64   |
| Netherlands   | -10  | -23  | -38  | -176 | 5    | 7    |
| Ireland       | 54   | 98   | 3    | 67   | 18   | 85   |
| Iceland       | b.d. | b.d. | b.d. | b.d. | 65   | 100  |
| Lithuania     | b.d. | b.d. | 38   | 99   | 40   | 91   |
| Latvia        | b.d. | b.d. | 83   | 100  | 64   | 81   |
| Germany       | 79   | 83   | 86   | 76   | 88   | 74   |
| Norway        | 42   | 99   | 73   | 100  | 76   | 98   |
| Poland        | 94   | 99   | 92   | 100  | 98   | 91   |
| Portugal      | 67   | 91   | 65   | 91   | 69   | 80   |
| Russia        | b.d. | b.d. | 99   | 63   | 98   | 83   |
| Romania       | 100  | 75   | 99   | 94   | 99   | 85   |
| Slovakia      | b.d. | b.d. | 97   | 90   | 84   | 96   |
| Slovenia      | b.d. | b.d. | 77   | 100  | 38   | 74   |
| Switzerland   | 100  | 90   | 100  | 94   | 100  | 83   |
| Sweden        | 55   | 100  | 60   | 100  | 67   | 100  |
| Ukraine       | b.d. | b.d. | 65   | 100  | 77   | 99   |
| Hungary       | 69   | 100  | 82   | 99   | 94   | 95   |
| Great Britain | 72   | 47   | 61   | 43   | 66   | 41   |
| Italy         | 88   | 67   | 87   | 71   | 91   | 75   |
| China         | 97   | 77   | 87   | 70   | 93   | 72   |
| Iran          | 100  | 74   | 100  | 84   | 100  | 87   |
| Israel        | 86   | 100  | 99   | 86   | 100  | 88   |
| Japan         | 100  | 92   | 100  | 98   | 100  | 100  |
| Kazakhstan    | b.d. | b.d. | 90   | 89   | 99   | 36   |
| Korea         | 100  | 100  | 100  | 99   | 100  | 98   |
| Turkey        | 100  | 97   | 100  | 97   | 100  | 96   |

**EUROPE**

**ASIA**

**AFRICA**

**NORTH AMERICA**

**Table 2 (359) 2019**
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#### CENTRAL AMERICA

| Country  | Production | Export | Import | Consumption | LOFI test | LIFO test | Tests ≥90% |
|----------|------------|--------|--------|-------------|-----------|-----------|------------|
| Mexico   | 100        | 58     | 99     | 60          | 100       | 31        | 95         | 26         | 100       | 34        | 71        | 33        |
| Honduras | 100        | 97     | 99     | 81          | 76        | 78        | 87         | 77         | 84         | 89        | 80        | 97        |

#### SOUTH AMERICA

| Country  | Production | Export | Import | Consumption | LOFI test | LIFO test | Tests ≥90% |
|----------|------------|--------|--------|-------------|-----------|-----------|------------|
| Argentina| 83         | 100    | 87     | 98          | 89        | 100       | 97         | 100        | 79         | 96        | 80        | 99        |
| Bolivia  | b.d.       | 73     | b.d.   | 98          | 96        | 89        | 41         | 46         | 12         | 74        | 41        | 90        |
| Brazil   | 100        | 86     | 100    | 80          | 100       | 87        | 98         | 100        | 95         | 98        | 96        | 99        |
| Chile    | 100        | 83     | 100    | 75          | 98        | 83        | 94         | 84         | 85         | 94        | 94        | 79        |
| Columbia | 100        | 100    | 100    | 98          | 100       | 98        | 99         | 100        | 99         | 100       | 99        | 100       |
| Uruguay  | 5          | 100    | 59     | 99          | 67        | 100       | 29         | 100        | 39         | 100       | 33        | 94        |
| Venezuela| 98         | 88     | 98     | 46          | 100       | 63        | 98         | 81         | 100        | 37        | 99        | 34        |

#### OCEANIA

| Country  | Production | Export | Import | Consumption | LOFI test | LIFO test | Tests ≥90% |
|----------|------------|--------|--------|-------------|-----------|-----------|------------|
| Australia| 69         | 99     | 39     | 95          | 37        | 86        | 54         | 91         | 56         | 81        | 61        | 75        |
| New Zeland| 16       | 100    | 12     | 100        | -4        | 105       | -10        | 96         | -6         | 103       | -14       | 101       |

Note: The negative value of the LIFO and LOFI test means that the export/import volume was higher than the production/consumption of the dairy product. Grey colour of a field means that in a given year the LIFO or LOFI test was met at the level of ≥90%, while a black field means that in a given year both tests were met at the level of ≥90%. Consumption was calculated in a balance manner as production + import - export. Source: own calculations based on the FAO data.

### Table 2

**The LIFO and LOFI tests for the market in butter in Poland in 1991-2014**

| Year  | Production (thousand tonnes) | Export (thousand tonnes) | Import (thousand tonnes) | Consumption (thousand tonnes) | LOFI test | LIFO test | Tests ≥90% |
|-------|------------------------------|--------------------------|--------------------------|--------------------------------|-----------|-----------|------------|
| 1991  | 191.2                        | 7.5                      | 40.0                     | 295.5                          | 96        | 86        | NO         |
| 1992  | 153.8                        | 1.3                      | 38.0                     | 220.4                          | 99        | 83        | NO         |
| 1993  | 146.4                        | 18.5                     | 19.7                     | 206.8                          | 87        | 90        | NO         |
| 1994  | 119.8                        | 8.0                      | 3.0                      | 198.1                          | 93        | 98        | YES        |
| 1995  | 122.9                        | 9.5                      | 0.3                      | 129.2                          | 92        | 100       | YES        |
| 1996  | 131.7                        | 13.1                     | 0.4                      | 143.2                          | 90        | 100       | YES        |
| 1997  | 139.0                        | 3.0                      | 4.9                      | 152.6                          | 98        | 97        | YES        |
| 1998  | 146.0                        | 5.0                      | 1.0                      | 157.3                          | 97        | 99        | YES        |
| 1999  | 134.6                        | 2.7                      | 7.6                      | 162.0                          | 98        | 95        | YES        |
| 2000  | 139.1                        | 3.0                      | 12.3                     | 143.4                          | 98        | 91        | YES        |
| 2001  | 154.0                        | 18.6                     | 3.5                      | 152.6                          | 88        | 98        | NO         |
| 2002  | 153.9                        | 11.8                     | 4.6                      | 157.0                          | 92        | 97        | YES        |
| 2003  | 167.0                        | 9.2                      | 5.3                      | 161.4                          | 94        | 97        | YES        |
| 2004  | 177.2                        | 27.6                     | 4.1                      | 152.0                          | 84        | 97        | NO         |
| 2005  | 178.1                        | 36.8                     | 3.6                      | 142.7                          | 79        | 97        | NO         |
| 2006  | 173.3                        | 24.1                     | 4.7                      | 142.6                          | 86        | 97        | NO         |
| 2007  | 181.9                        | 32.1                     | 6.6                      | 138.0                          | 82        | 95        | NO         |
| 2008  | 182.5                        | 30.5                     | 6.7                      | 133.4                          | 83        | 95        | NO         |
| 2009  | 170.2                        | 18.1                     | 9.9                      | 133.4                          | 89        | 93        | NO         |
| 2010  | 177.4                        | 26.9                     | 14.3                     | 124.2                          | 85        | 88        | NO         |
| 2011  | 171.4                        | 34.1                     | 14.4                     | 119.6                          | 80        | 88        | NO         |
| 2012  | 171.6                        | 31.2                     | 12.2                     | 115.0                          | 82        | 89        | NO         |
| 2013  | 172.5                        | 32.5                     | 13.6                     | 114.9                          | 81        | 88        | NO         |
| 2014  | 179.6                        | 35.7                     | 14.9                     | 114.9                          | 80        | 87        | NO         |

Note: Consumption was calculated as the product of population size and annual consumption of butter per capita. Grey colour of a field means that in a given year the LIFO or LOFI test was met at the level of ≥90%. Source: own calculations based on data Rynek Mleka (1990-2017).
In 2005, the LOFI test for the butter market in Poland was not met at the level of 90% and was lower than the LIFO, which is why the largest recipient of butter, i.e. Germany, was added to Poland (Table 3). After adding Germany, both the LOFI and LIFO tests changed, but they were still not met at the level of 90%. The market created by Poland+Germany conducted the largest trade exchange with the Netherlands, therefore it was added to the analysed market. As the Poland+Germany+the Netherlands market still did not meet the tests, further countries with the largest trade exchange with the analysed market were added until adding Taiwan and obtaining the assumed percent thresholds for the LOFI and LIFO tests.

From the mid-1990s until the accession to the EU, foreign trade in butter was small and characterised by volatility which was mainly determined by low world prices and the lack of subsidisation possibilities. Until this moment, the butter market in Poland, defined according to the Elzinga–Hogarty method, had a domestic scope. After the accession to the EU, the abolition of customs barriers resulted in an increase in butter exports, as a result of which in 2005 the (defined) butter market included Poland and 19 other countries from Europe, Asia, Africa, North America and Oceania (Table 3). The market in butter defined this way represented production at the level of 3361 thousand tonnes and consumption at the level of 3292 thousand tonnes, with import and export amounting to 238 thousand tonnes and 317 thousand tonnes, respectively. The market defined this way had a very large share (around 70%) in global production and consumption, with a share in global export and import of 21% and 17%, respectively.

The butter market defined with the Elzinga–Hogarty method in 2014 included Poland and the following 11 countries: the Czech Republic, Germany, the Netherlands, France, Ireland, Belgium, Great Britain, Italy, Denmark, Spain and Slovakia (Table 4). Countries added to Poland included significant world importers and exporters of butter. Compared to 2005, this market represented a similar volume of trade, production and consumption of butter, but its share in the global market in comparison to 2005 was smaller – 11% in terms of export and import and 36% in terms of production and consumption, respectively. In 2014, the share of the separated butter market in global export and import was 10% and 7%, respectively, which indicates that in terms of movement of goods it was quite a homogeneous, fairly closed whole.

It can be noticed that the structure of the countries forming the butter market has changed. In 2005, the butter market in Poland had to be enlarged by 19 countries from 5 different continents for the LOFI and LIFO tests to be met (Fig. 1), while in 2014 by only 11 countries located in Europe (Fig. 2). Taking into account the analyses carried out, it can be assumed that according to the Elzinga–Hogarty method, until 2004 the butter market in Poland had a domestic scope, and then

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1 The volume of import and export refers only to import and export outside the defined market area, without the movements of goods between the countries forming the common market defined.
in 2005-2014 it had a transnational character. It can be assumed that in 2005 the market in butter had a semi-global scope, while in 2014 regional scope – there was a concentration of directions of import and export of butter limited to Europe, mainly the EU countries.

Table 3

| Order of adding | Country       | Export (thousand tonnes) | Import (thousand tonnes) | Production (thousand tonnes) | Consumption (thousand tonnes) | LOFI test | LIFO test | Tests ≥90% |
|----------------|---------------|--------------------------|--------------------------|------------------------------|-------------------------------|-----------|-----------|-----------|
| 1              | Poland        | 38                       | 5                        | 209                          | 176                           | 82.0      | 97.4      | NO        |
| 2              | + Germany     | 111                      | 120                      | 659                          | 668                           | 83.2      | 82.0      | NO        |
| 3              | + Netherlands | 233                      | 117                      | 774                          | 668                           | 69.9      | 82.5      | NO        |
| 4              | + Ireland     | 304                      | 74                       | 917                          | 697                           | 66.8      | 89.3      | NO        |
| 5              | + France      | 327                      | 159                      | 1344                         | 1186                          | 75.7      | 86.6      | NO        |
| 6              | + Belgium     | 364                      | 168                      | 1457                         | 1270                          | 75.0      | 86.8      | NO        |
| 7              | + Italy       | 327                      | 165                      | 1586                         | 1434                          | 79.4      | 88.5      | NO        |
| 8              | + Great Britain | 314                  | 235                      | 1716                         | 1647                          | 81.7      | 85.8      | NO        |
| 9              | + Denmark     | 282                      | 181                      | 1761                         | 1670                          | 84.0      | 89.1      | NO        |
| 10             | + New Zealand | 551                      | 133                      | 2140                         | 1732                          | 74.2      | 92.3      | NO        |
| 11             | + Egypt       | 513                      | 121                      | 2173                         | 1791                          | 76.4      | 93.2      | NO        |
| 12             | + Iran        | 477                      | 127                      | 2349                         | 2010                          | 79.7      | 93.7      | NO        |
| 13             | + Russia      | 444                      | 173                      | 2602                         | 2342                          | 82.9      | 92.6      | NO        |
| 14             | + Mexico      | 413                      | 192                      | 2621                         | 2410                          | 84.2      | 92.0      | NO        |
| 15             | + USA         | 390                      | 203                      | 3232                         | 3055                          | 87.9      | 93.4      | NO        |
| 16             | + Saudi Arabia| 390                      | 206                      | 3236                         | 3063                          | 88.0      | 93.3      | NO        |
| 17             | + Morocco     | 366                      | 218                      | 3256                         | 3119                          | 88.8      | 93.0      | NO        |
| 18             | + Azerbaijan  | 345                      | 207                      | 3269                         | 3141                          | 89.4      | 93.4      | NO        |
| 19             | + Singapore   | 330                      | 216                      | 3269                         | 3164                          | 89.9      | 93.2      | NO        |
| 20             | + Taiwan      | 317                      | 238                      | 3361                         | 3292                          | 90.6      | 92.8      | YES       |

Note: the volume of import and export refers only to import and export outside the defined market area, without the movements of goods between the countries forming the common market.

Grey colour of a field means that in a given year the LIFO or LOFI test was met at the level of ≥90%.

Source: own calculations based on the FAO data.

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2 Based on the approach of Luostarinen and Hellman (1993), the following geographic scopes have been distinguished: national sector (no internationalisation or pre-internationalisation, i.e. only passive forms of foreign expansion); regional sector (active forms of foreign expansion to several countries but within one continent); semi-global sector (active forms of foreign expansion to countries located on different continents); global sector (active forms of foreign expansion to countries located on all continents).
Foreign expansion of the butter market (transition from the domestic to supranational scope) was possible, e.g. thanks to the suitability of butter for transport and storage. Butter is included in the group of durable dairy products, as its durability in retail trade is 10-30 days, while storage durability in cold stores reaches even 12 months (Pijanowski and Zmarlicki, 1985; Pietrzak, 2002). It should be mentioned that butter is characterised by low specificity and is manufactured according to a similar technology in the majority of countries. Butter is a mass product and there is little possibility of diversifying it. Therefore, consumer preferences regarding this product may be similar which may push the processes of internationalisation and globalisation. On the other hand, as a result of the ongoing discussion on the harmfulness of animal fat, the demand for this product is decreasing. Thus, the observed changes in geographical directions and the intensity of expansion of this market should be attributed primarily to very high sensitivity of this market to cyclical changes.
Fig. 1. Geographic scope of the market in butter in 1995 and 2000 according to the E–H method (national).
Source: own study.

Fig. 2. Geographic scope of the market in butter in 2005 according to the E–H method (semi-global).
Source: own study.

Fig. 3. Geographic scope of the market in butter in 2014 according to the E–H method (regional).
Source: own study.
Summary and conclusions

Internationalisation is a complex economic phenomenon and can be considered at three levels: macro-, meso- and microeconomic. Internationalisation can be analysed in two dimensions – within the intensity of involvement in activities abroad and within the geographic scope of these activities. The second dimension within the framework of the mesoeconomic approach is related to determination of the geographic boundaries of the market. Determination of geographical boundaries of foreign expansion of a given market also allows for the proper selection of methods to solve other research problems.

Application of the Elzinga–Hogarty method allowed identifying the directions of changes in the spatial scope of the butter market in Poland in 1990-2014. It can be assumed that until Poland’s accession to the EU, the market in butter had a domestic scope, and then it increased its scope and became a semi-global market. In turn, in the second decade of the 21st century, there was a concentration of directions of trade exchange and the scope decreased to regional. Therefore, it can be concluded that in the analysed period the processes of both internationalisation and de-internationalisation were observed on the butter market in Poland.

In addition, based on the analyses carried out, it can be assumed that the Polish butter market is connected to the international market – especially within the European Union countries. It gives, e.g. the basis to postulate that the policy and market and trade regulations for this market should be shaped taking into account the supranational level.

It is also worth noting that the results obtained may be influenced by the assumptions accepted in the Elzinga–Hogarty method. Firstly, according to the suggestion of the method’s creators, the threshold for meeting the LIFO and LOFI tests was set at the level of 90%, however, the adoption of lower thresholds would result in narrowing the geographical boundaries of the butter market. Secondly, the starting point for the analyses was the dairy sector in Poland. Beginning the analyses from a different starting point (another country) would probably also change the results obtained. In the context of the above limitations of the Elzinga–Hogarty method used, it is worth carrying out analyses of internationalisation of the butter market based on other approaches, e.g. indicative or qualitative, as part of further research.
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INTERNACJONALIZACJA RYNKU MASŁA

Abstrakt

Głównym celem artykułu było określenie zmian zasięgu geograficznego procesów internacjonalizacji rynku masła w Polsce z wykorzystaniem metody bazującej na przepływach towarów (metoda Elzinga–Hogarty). Bazując na danych wtórnych FAO i IERiGŻ-PIB, stwierdzono, że rynek masła w Polsce do 2004 roku miał zasięg krajowy, następnie po integracji z UE zasięg rozszerzył się do semi-globalnego, po czym nastąpiła koncentracja ekspansji w ramach form handlowych do krajów UE i zasięg geograficzny zawęził się do regionalnego. W 2014 roku rynek masła obejmował Polskę oraz 11 krajów będących członkami Unii Europejskiej. Tak zdefiniowany rynek masła charakteryzował się produkcją na poziomie 3361 tys. ton, konsumpcją na poziomie 3292 tys. ton oraz eksportem i importem odpowiednio na poziomie 317 i 238 tys. ton.

Słowa kluczowe: zasięg geograficzny, internacjonalizacja, rynek masła, metoda Elzinga–Hogarty.

Accepted for print: 10.06.2019.