COMPETITIVENESS ANALYSIS OF THE REPUBLIC OF MOLDOVA BY MEANS OF EFFICIENCY INDICATORS OF FOREIGN TRADE WITH AGRICULTURAL FOOD PRODUCTS

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Abstract

An old traditional form of foreign economic relations is represented by foreign trade. Republic of Moldova, Featuring a geographical position that represents the area of intersection the numerous trade routes and regional connotation communications, should use these advantages in order to extend the export-import relations; there for, Republic of Moldova follows to use the internal potential in intensive and effective way. Competitiveness of external trade with agricultural food products has a particularly important role which is steadily increasing, it determine the increasing or decreasing of the national income produced outside depending upon the ratio between the national and international amount of goods. Ensuring the economic efficiency of production requires a certain minimum volume of its. If the volume exceeds the absorption capacity of the internal market, ensuring efficient production requires a call to the external market. On the other hand, certain products can not be obtained either domestic production or isn't justified from the economic point of view can be obtained only from the external market.

Keywords: agricultural food products, competitiveness, economic efficiency, external trade, market, profit

INTRODUCTION

In a market economy, the decisive factor in the successful trade on the agri-food products market is the competitiveness, which means the obedience of product market conditions, specific requirements of consumers, not only the quality but also the economic, ecological and other commercial requirements necessary to be implemented (cost, delivery, distribution channels, advertising, etc.). The agri-food market has specific significant features and forms of market organization (real demand, integrated, local and state market, raw material and finished product).

At present, food security problem is one of the main systems of human life insurance and has a crucial importance together with the objectives of general economic security and security of the whole country.

Food security – first of all, ensures a certain level of local production or self-insurance complexity (for the countries with precocious development conditions and highly integrated in the world economy) and keeps the minimum maintenance level [1, p. 89].

Trade integration requires also an improvement in terms of food safety and quality control systems. It is also necessary to develop a strategy on food safety related to chemical and biological safety of the food products of animal and plant origin.

As a response to these changes, the diversification of foreign markets becomes a key factor in reducing the dependency of Moldovan agricultural products on CIS markets. Improving access to markets and market infrastructure development must be addressed taking into account three major constraints:

1. Farmers' inability to implement the standards of food quality and safety;

2. Lack of modern facilities for internal trade such as the networks of regional wholesale markets;

3. Underdeveloped post-harvest infrastructure. Customs office data regarding the countries importing in CIS states were examined and most cases of goods rejection from those markets are related to the changes in regulatory practices (e.g.: the adoption of Acquis Communautaire by Romania in

anticipation of its adherence to the European Union in 2007) or to state policies motivated by offenses relating to sanitation and phyto-sanitation measures (e.g.: In September 2005, Russia banned the export of fruits and vegetables from the Republic of Moldova and in 2008, it partially banned the export of alcoholic beverages (wine)).

The main interest areas of the sanitary and phyto-sanitary system regarding the export are: controlling the microbiological hazards transmitted through food and water, controlling the zoonotic diseases and pesticide residue testing.

Country's information about pesticide residues is very limited, but the general consensus is that during several decades, Moldova's agriculture was focused on reducing the use of chemicals and on the fact that the amounts of pesticide residues must be very small both in the livestock sector and phyto-technical cultures. Also, the failures related to obsolete pesticide packaging and leaking and persistent organic pollutants stored in warehouses in different regions of the country could become a danger of acute pesticide poising in humans.

The relevant approach to the problem of food security as the key factor of trade development involves the use of suitable tools together with efficient management in conditions of increased efficiency of multiple processes that ensure people's access to qualitative agri-food products at affordable prices, such as: informing farmers about the evolution of agricultural markets so that they can plan their production in advance and to adjust it to market demand; informing farmers about the market prices in urban areas so that they can negotiate with traders on equal terms; effective management of the agri-food trade in terms of market diversity etc.

Also the need to evaluate the compliance of the sanitary and phyto-sanitary control systems and customs procedures in the Republic of Moldova with WTO non-discrimination rules concerns the development of an action plan to modernize these systems in accordance with international requirements, according to need.

The increasing requirement for the use of security and quality control systems, such as HACCP and ISO standards, has resulted in the transfer of responsibilities to the private sector. Government may focus on the provision of public services such as enforcement of laws and regulations, infrastructure and development of human skills [2].

Elaborating a support program for the food industry modernization. Modernization projects of the private sector may include renovation of old factories, quality management, water supply, waste management and distribution network organization. The support should include comprehensive improvement plans in order to meet EU principles of hygiene in food processing, accompanied by funding programs and plans.

Increasing the role of agricultural production management in relation to the objective trends of competition, liberalization of economic relations and improvement of the selective consumers. Therefore, the management of agricultural production must be processed by the administrative marketing, which *aims* to identify the prospective areas and marketing activities that provide advantageous competition using resources at minimal cost [3, p. 87].

Two categories interact in the process of evaluating product competitiveness: the category of consumers and the one of producers. The competitiveness of agri-food products is determined by the adequate degree of its use and it also must meet the criteria and indicators of consumer demand because the consumption value of the agricultural production has a special significance as physiological and human needs cannot be delayed (Figure 1).

When evaluating the competitiveness of local producers one can note different features and groups of indicators that characterize market share, profits and competitive advantages. For this purpose, there are used different analytical methods, expert methods, integrated indicators of quality and competitiveness.
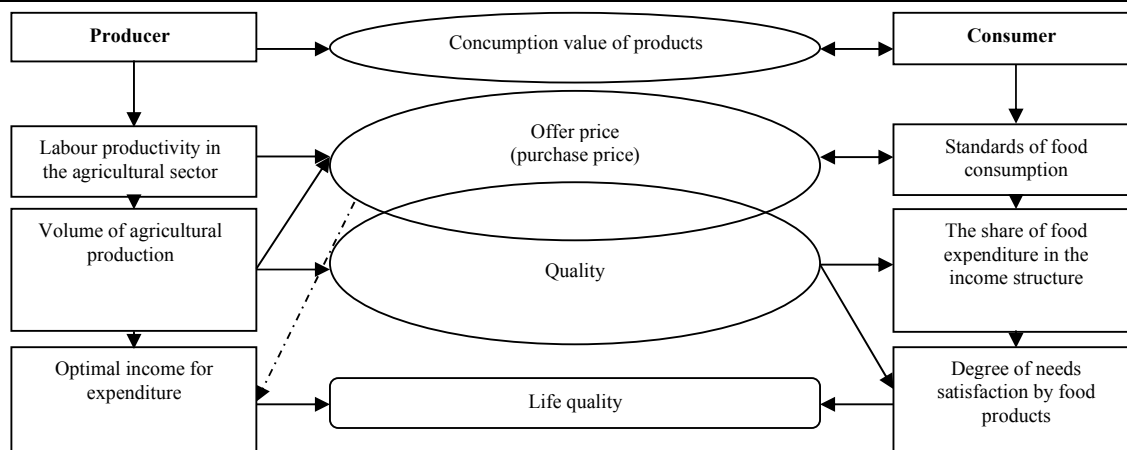
Fig. 1. Evaluation criteria of the agricultural market competitiveness

Source: elaborated by the author

Both for producers and consumers, *the competitive products* – do not represent an abstract figure but one having a definite quantitative magnitude of production, a high yield or profitability of the finished products, and in the presence of competition and under the control of general quality requirements, they can be directly expressed in units of value.

MATERIALS AND METHODS

Research aspirations, in the field of Moldova's competitiveness through the prism of efficiency indicators of the foreign agri-food trade, made use of various methods and procedures such as: analysis, induction, deduction and synthesis which allowed to research the essence of the topic and draw conclusions that we believe will present interest for the economic science. The final result consists in drawing conclusions and scientific argumentation of the main aspects related to the prospects and increased efficiency of Moldova's foreign trade.

RESULTS AND DISCUSSIONS

The measurable component of foreign trade efficiency typically lies in the macroeconomic perspective. At this level, one can determine a great number of indicators/indices of country's economic/financial efficiency based on statistical data on foreign trade, as well as the exports and imports, respectively, in a given period, usually during a year. The financial situation of a country's exports is reflected periodically in the components of the external payments balance, and these components include:

1. Trade balance, expressing the import or export of tangible goods;
2. The balance of services expressing the import or export of services.

Usually, we calculate distinct groups of statistical indicators of foreign economic transactions in a country involved in the global economic cycle. There are four main groups of indicators that quantify foreign trade efficiency:

1. The indicators expressing the international economic openness or the development level of foreign trade and/or integration in the foreign trade or the indicator of foreign trade intensity;
2. The indicators expressing the dynamics of trade with foreign countries, i.e. the indicators showing the situation in the current year compared to reference year or basic period;
3. The indicators showing the geographical distribution of the foreign trade of a country, or showing the evolution of the partner country regarding the import/export;
4. Indicators expressing a country's terms of trade.

Further, we'll relate about the categories of quantification indicators/indices of Moldova's foreign trade. This suggests that this analysis approach corresponds to the macroeconomic evolution compared to foreign trade efficiency:

1.The indicators expressing the international economic openness or the development level of foreign trade and/or the integration level in foreign trade.

a.The indicator of foreign trade intensity (I_{ce}^{i}), concisely, the calculation of commercial activity per capita is done according to the following formula:

$$I_{ce}^{i} = \frac{V_{ce}(E_v + I_v)}{N_{mp}} \qquad (1.)$$

where:

$V_{ce}(E_v + I_v)$ – foreign trade volume;

N_{mp} – average number of people.

This indicator expresses the foreign performance of a national economy, the more this indicator is higher, the more the country is involved in foreign trade. Usually, the export is expressed in a stable currency (USD, EURO, etc.). In this form of expression, the indicator is sometimes used in international comparisons carried out under the auspices of international bodies. This indicator shows the internal performance of an economy to create or generate added value [4].

For a more detailed report we'll use the data provided by the sources 138 and 146 and applying the above formula, we can calculate the indicator of foreign trade intensity. For the Republic of Moldova the indicator of foreign trade intensity (I_{ce}^{i}), constitutes:

$$I_{ce}^{i} = \frac{3216,312 + 2191,251}{3,8638} = \frac{7408,065}{3,8638} = 2078,70 \text{ USD (2.)}$$

The indicator showing the level of foreign trade development can be determined separately for each of the two components: for export (I_{ce}^{EX}) and for import (I_{ce}^{IM}), and the calculations can be expressed as shown below. The obtained results are reflected in Table 1.

$$I_{ce}^{EX} = \frac{V_v^{EX}}{N_{mp}} = \frac{2216,312}{3,8638} = 622,04 \text{ USD} \qquad (3.)$$

$$I_{ce}^{IM} = \frac{V_v^{IM}}{N_{mp}} = \frac{2191,251}{3,8638} = 1456,67 \text{ USD} \qquad (4.)$$

where:

V_v^{EX} – export volume;

V_v^{IM} – import volume;

N_{mp} - average number of people.

According to the obtained results (Table 1), we can mention that in 2011 compared to 2010, 2009 and 2005, the level of foreign trade development was of 2.19, 1.62 and 1.37 respectively. The volume of imports compared to the volume of exports in 2011, 2010, 2009 and 2005 in the Republic of Moldova was of 2.34, 2.50, 2.56, 2.10. The indicators registered in the analyzed period do not show essential decreases or increases, but in 2011 compared to 2010 it was 0.16 times lower, compared to 2009 –0.22 times lower and compared to 2005 - 0.24 times lower per capita. It should be specified that the Republic of Moldova recorded a lower indicator of foreign trade intensity than the neighbouring countries. In 2011, Romania recorded an indicator (of the two components) amounting to 1.22 per capita; Ukraine - 1.21; Republic of Belarus - 1.10; Poland - 1.10; Estonia - 1.04, etc. The determination of indicators was based on Table 1.

Table 1. The indicator of foreign trade intensity per capita in the world countries in the period 2009-2011

Countries	The indicator of foreign trade intensity			The indicator of foreign trade intensity (export component)			The indicator of foreign trade intensity (import component)		
	2009	2010	2011	2009	2010	2011	2009	2010	2011
Totally worldwide	**3514,75**	**4285,26**	**5124,91**	**1738,77**	**2123,59**	**2538,87**	**1775,99**	**2161,67**	**2586,04**
Belarus	5260,27	6346,09	9194,90	2247,01	2666,72	4368,55	3013,26	3679,37	4826,35
Croatia	7161,88	7202,78	8152,01	2370,64	2668,63	3019,61	4791,25	4534,15	5132,40
Czech Republic	20705,37	24518,45	29784,19	10734,72	12565,92	15442,61	9970,65	11952,53	14341,58
Georgia	1239,59	1505,41	2084,17	255,53	356,90	493,45	984,06	1148,51	1590,73
Italy	13557,07	15437,08	17858,54	6710,97	7390,20	8636,08	6846,10	8046,89	9222,46
Poland	7495,02	8672,95	10404,01	3578,23	4113,06	4925,91	3916,79	4559,88	5478,10
Republic of Moldova	1279,88	1514,33	2078,70	360,00	432,54	622,04	919,88	1081,79	1456,67
Romania	4715,18	5537,32	6910,83	2018,77	2455,73	3115,65	2696,41	3081,59	3795,18
Russian Federation	3307,25	4380,38	5759,65	2111,86	2778,54	3617,73	1195,38	1601,84	2141,92
Ukraine	1861,35	2453,13	3302,42	868,15	1124,79	1495,77	993,19	1328,34	1806,65

Source: author's calculations based on data from Trade Map source. Trade statistics for international business development, 2013. http://www.trademap.org/Product_SelCountry_TS.aspx

b.*The share of exports in GDP or economic openness degree (EOD)* means the total value of exports in foreign currency (USD, EURO, etc.) and the GDP value in the same unit of measurement. The calculation is as follows:

$$EOD = \frac{EX}{PIB} \times 100\% \qquad (5.)$$

For the Republic of Moldova the degree of economic openness constitutes:

$$EOD = \frac{2216.85}{6733.87} \times 100\% = 32.91\% \qquad (6.)$$

This indicator shows the ability of a country to commercialize on foreign markets in conditions of increased global competition. EOD also reveals the relative dependency level of a country on the foreign sale markets, and namely the ability to valorize its own commodity production [4].

c.*The share of a country in world exports (Pₑ):*

$$P_e = \frac{EX_{stat}}{EX_{mond}} \times 100\% \qquad (7.)$$

The share of the Republic of Moldova in the world exports constitutes:

$$P_e = \frac{2216815}{17999749613} \times 100\% = 0.012316\% \qquad (8.)$$

The values of this indicator are similar to those of the previous one and this could be explained by the fact that it was used the approach of the world economy. It can also be compared to the share of that country in total world population, total world production or world GDP. For comparison it could be noted that in 2011 the share of Ukraine in world exports was of 0.38%, Romania - 0.35%, Turkmenistan - 0.41%, Belarus - 0.23%, Armenia - 0.007, Russian Federation - 2.87, USA - 8.22%, while the Republic of Moldova ranges currently between 0.01 and 0.02% in the total world exports.

d.*Completion rate of the GDP with the import of goods (PᵢₚᵢB)* is calculated as the percentage ratio of imports to GDP:

$$P_{iPIB} = \frac{IM}{PIB} \times 100\% \qquad (9.)$$

For the Republic of Moldova the completion rate of GDP with the import of goods will constitute:

$$P_{iPIB} = \frac{5191271}{6733.87} \times 100\% = 77.07\% \qquad (10.)$$

This indicator shows country's dependency on the foreign supply markets and/or on economy's orientation towards import [5]. Also, it shows the GDP share achieved via imports, which means that payment depends on the currency obtained from the export of goods, export of services, attracted FDI or other similar sources. Strong dependency of a country on the import of goods and raw materials can induce a fragile character of the long-term economic development and growth model.

e.*The share of a country in the international imports (Pₑ):*

$$P_i = \frac{IM_{stat}}{IM_{mond}} \times 100\% \qquad (11.)$$

The share of the Republic of Moldova in the international imports constitutes:

$$P_i = \frac{5191271}{18333794314} \times 100\% = 0.028315\% \qquad (12.)$$

This indicator offers the opportunity to highlight the relative size of national markets for potential market entrants. For example, in 2011, Ukraine's share in world imports constituted 0.45%, Romania - 0.41%, Turkmenistan - 0.036%, Republic of Belarus - 0.25%, Armenia - 0.022%, Russian Federation - 1.67%, USA - 12.34%, while in the Republic of Moldova, this indicator constituted 0.028% in total world imports.

f.*Trade balance (SBC).* It could be determined in absolute and/or relative sizes and it shows the balance between total export and import of tangible goods. In 2011, for the Republic of Moldova, it constituted:

in absolute size:

$$S_{BC} = EX - IM = 2216815 - 5191271 = -2974456 \; mil \; USD$$

$$(13.)$$

in relative size divided to GDP:

$$S_{BC} = \frac{EX-IM}{PIB} \times 100\% = \frac{2216815 - 5191271}{6733.87} \times 100\% = -44.16\%$$

$$(14.)$$

in relative size divided to the total value of foreign trade:

$$S_{BC} = \frac{EX-IM}{EX+IM} \times 100\% = \frac{2216815 - 5191271}{2216815 + 5191271} \times 100\% = -40.15\%$$

$$(15.)$$

This indicator allows estimating payment risks in the future transactions with business partners from this country. In mathematical ratio, we are interested in SBC share in total GDP:

$$P_{BC} = \frac{EX-IM}{PIB} \times 100\% = \frac{2216.813 - 3191.371}{6792.87} \times 100\% = 44.16\%$$

(16.)

It should be noted that, if the absolute value of the indicator has a value below 2.5% (-2,5%….+2,5%), it is relatively acceptable because in the context of trade balance disequilibrium it will not significantly affect the overall S_{BC} balance. Thus, for the Republic of Moldova this indicator is 18 times higher than the mentioned value.

g.*Export propensity of a country* or *rate of coverage of imports by exports*. It was determined as the percentage ratio between the export value *(Vex)* and import value *(Vim)*. Therefore, the rate of coverage of imports by exports in the Republic of Moldova constitutes:

$$Rate\ of\ coverage = \frac{V_{ex}}{V_{im}} \times 100\% = \frac{2216813}{3191371} \times 100\% = 42,70\%$$

(17.)

The previous indicator can be calculated for a given category of goods or for all categories of exported or imported products. It also indicates the degree to which the funds necessary for the import of goods are secured by the export of goods of that country. It obviously depends on the trade balance and theoretically, it is desirable that the value of this indicator would be at least 100%, which corresponds to an equilibrated trade balance.

2.*The indicators expressing the dynamics of foreign trade*.

This indicator shows the evolution in the current year t_1 compared to another reference year or basic period t_0. It means that one can estimate country's export or import in two different periods, i.e.:

$$V = q \cdot p$$

(18.)

where:

V – EX or IM volume, showing the value in currency units (USD, EURO, etc.);

q –EX or IM quantity;

p – the price of an exported or imported unit of product.

Dynamics of foreign trade indicators is estimated at current prices of each year as the volume of the current year value is expressed in the prices of basic period, and therefore, it

is difficult to quantify it. In this context, the value index I^V of EX or IM is quantified at current prices based on the following ratio:

$$I^V = \frac{\sum q_1 p_1}{\sum q_0 p_0}$$

(19.)

The above indicator is frequently influenced by changes in the IM or EX prices, therefore, in order to avoid such influences it is usually compared the value index of EX/IM with the value index of GDP, according to the ratio:

$$\frac{I^V(EX)}{I^V(PIB)} \ respectively \ \frac{I^V(IM)}{I^V(PIB)}$$

(20.)

It should be mentioned that that the sub-unitary value of this indicator shows a sharp increase in imports or exports compared to the GDP.

In the Republic of Moldova, in 2011, this indicator did not record growth rates that have exceeded GDP growth, as shown by the following values:

$$\frac{I^V(EX)}{I^V(PIB)} = 0,33 \ respectively \ \frac{I^V(IM)}{I^V(PIB)} = 0,77$$

(21.)

3.*The indicators showing the geographic distribution of a country's foreign trade*.

a.This indicator shows the EX/IM evolution of a country [4]. In the groups of indicators we should include the indicators that reflect the share of primary commodity groups in the total EX/IM of the analyzed country. Based on the classification of goods, it is established the *share (Pi)* for each category of goods:

$$P_i = \frac{V_i}{\sum_{i=1}^n V_i} = \frac{V_i}{ΣV} \times 100\%$$

(22.)

Using the above ratio, we can determine the share of commodity groups both in export and import. Normally, the shares of the product categories are summed up with the highest values in export in order to observe product diversification level of the analyzed country; also it can be used to determine the dependency of a certain country on certain groups of imported goods.

b.*The coefficients of territorial concentration* are used in the research of geographical distribution of EX/IM of a partner country in the total exports/imports of the analyzed country. For example, for the Republic of Moldova, the top 20 countries that have the largest share in its foreign trade and the main partners from the EU and CIS are shown in Table 2. In 2011, the largest share in total export was recorded by the Russian Federation

and namely 28.2%, Romania - 17%, Italy - 9.8%, Ukraine - 6.9%, Germany - 4.8, UK - 4 6%, etc. Also, in 2011, the largest share in imports was recorded by the Russian Federation which had a share of 15.9%, followed by

Romania with 14.1%, Ukraine - 12.4%, China - 7.7%, Turkey - 7.4%, etc. A more detailed presentation of the top 10 countries that have the largest share in Moldova's foreign trade is reflected in Table 2.

Table 2. The top of 10 countries which had the largest share in the foreign trade of the Republic of Moldova, in the period 2007-2011

Nr. d/o	Trade partners	IMPORT					EXPORT				
		2007	2008	2009	2010	2011	2007	2008	2009	2010	2011
		100	100	100	100	100	100	100	100	100	100
	Russian Federation	13,5	13,6	11,4	15,2	15,9	17,3	19,7	22,3	26,2	28,2
	Romania	12,2	12,1	9,5	10	14,1	15,7	21,1	18,7	16	17
	Ukraine	18,6	17,1	14	13,7	12,4	12,5	9	6,3	5,9	6,9
	China	5,5	6,6	7,5	8,3	7,7	0,1	0,1	0,1	0,1	0,2
	Turkey	4,5	4,7	5,3	5,3	7,4	2,4	2,1	2,5	4,4	3,3
	Germany	8,7	7,4	7,7	7,6	7,3	6,4	4	5,9	4,9	4,8
	Italy	7,3	6,3	7,1	7	6,7	10,4	10,6	10,8	9,8	9,8
	R. Belarus	3,2	4,1	4,2	3,1	3,8	6,1	5,8	6,3	5,2	3,4
	Poland	2,4	2,5	2,7	2,7	2,6	3,6	3,5	2,6	3	3,9
	Austria	1	1,5	1,7	1,5	1,6	2,3	0,8	0,6	0,7	0,6

Source: author's calculations based on data from Trade Map source. Trade statistics for international business development, 2013. http://www.trademap.org/Product_SelCountry_TS.aspx

If we analyze the structure of countries that have the largest share in exports and imports, from one year to another, we can see that trade share recorded essential changes, but generally the main partners remain the same. Here we should mention that previously remarked indicator could be determined in a more rigorous manner based on Hirschmann coefficient, which is most widely used in international statistics provided by UNCTAD, its value ranging between 0-100.

c.*Index of trade intensity between two countries (T$_{ij}$),* is used to analyze geographic distribution and diversification of trade in goods. It is used to observe if the value of bilateral trade is higher or lower than the expected value based on the relative importance of the two countries in the foreign trade.

This index is obtained in the conflagration of a country's *i* share of exports to another country *j*, marked by *(e$_{ij}$)* in total exports of the country *i* and marked by *(E$_{ij}$)*, i.e. *e$_{ij}$ /E$_{ij}$,* with the share of total world exports to country *j* marked *(e$_{mj}$)* in total world exports marked by *(E$_{mt}$)*, i.e. *e$_{mt}$ /E$_{mt}$* [6, p. 453].

$$T_{ij} = \frac{e_{it}}{E_{it}} \Big/ \frac{e_{mt}}{E_{mp}} \qquad (23.)$$

It should be noted that if a sub-unitary value of this index records a higher intensity of the

foreign bilateral trade between the two countries *i* and *j* compared with the average value existing at international level, then this index has a diversifying aspect.

d.*The number of categories of goods* sold abroad is an indicator that highlights the diversification process of foreign economic relations and foreign trade efficiency therefore providing the image on structural diversification of national economy.

e.*Diversification coefficient or index (S$_j$).* This coefficient expresses the absolute deviation of a country's export structure from the structure of world exports.

$$S_j = 0.5 \times \sum |h_{ij} - h_{im}| \qquad (24.)$$

where:

S$_j$ –structural deviation of a country's *j* exports from the structure of world exports;

h$_{ij}$ – the share of a product or a category of products *i* in country's *j* exports*;*

h$_{mj}$ – the share of a product or a category of products *i* in the world exports.

f. *Grubel-Lloyd index (IGL$_k$)* is formed on the assumption that the preponderance of industrial trade in a particular branch of activity expresses the competitiveness of that branch in the foreign market. The preponderance of the inter-industry trade highlights the specialization of economy, and namely that the imported products, specific to

a certain branch, are paid with exported products specific to any branch [4]. At the industry level k, out of a number n of industrial branches in a country, this index is expressed as follows:

$$IGL_k = 1 - \frac{|e_k - i_k|}{|e_k + i_k|} \qquad (25.)$$

where:

$IGL_k = 0$ – inter-industry trade, when the country imports or exports only industrial goods k;

$IGL_k = 1$ – intra-industry trade, when the exchange of industrial goods k is perfectly balanced i.e. when exports equal to imports for k.

g. *Revealed comparative advantage (ACR)* or Balassa index [7, p.101], of the merchandise t is calculated according to the following ratio:

$$ACR_{kt} = \frac{X_{kt}/X_{wkt}}{X_k/X_w} = \frac{X_{kt}/X_k}{X_{wkt}/X_w} \qquad (26.)$$

where:

X_{kt} = merchandise value k, exported by the Republic of Moldova;

X_{wkt} = merchandise value k, exported by all countries on the EU market;

X_k = total export volume of the Republic of Moldova on the EU market;

X_w = total volume of world exports on the EU market.

Two equivalent interpretations of this index will result based on two equivalent calculating methods of this index presented in the previous formula. If the index value is higher than one, there is a relevant revealed comparative advantage of the given sector or product. Certainly, this index caused much criticism and required improvements, but the popularity of this index was not affected too much.

Further, we shall analyze the most frequently used indicators regarding foreign trade evolution in different countries:

1. *Gross or quantitative barter terms of trade index (IRSB)* is determined as the percentage ration between the physical volume index of exports (V_j^{EX}) and imports (V_j^{IM}) [5], according to the following formula:

$$IRSB = \frac{V_j^{EX}}{V_j^{IM}} \times 100\% \qquad (27.)$$

For the Republic of Moldova, in 2011 compared to 2010, it constituted:

$$IRSB = \frac{1.484102}{1.346232} \times 100\% = 106,80\% \quad (28.)$$

The situation is advantageous when IRSB < 100%, because for each unit of imported product, a quantitatively reduced export must be done. When IRSB > 100%, it means that for each unit of imported product, one should pay more than a unit of exported product.

2. *Net or value barter terms of trade (IRSN),* also named *terms of trade index* [5], is determined as the percentage ratio between the export unit value index *(Ipe)* and import unit value index *(Ipi)*.

$$IRSN = \frac{I_{pe}}{I_{pi}} \times 100\% \qquad (29.)$$

In other words, the ratio between prices reflects foreign trade evolution at the moment t_1 compared to the moment t_0. However, this index shows the ratio of the average unit value of exports to the average unit value of imports.

It should be noted that if the value is higher than 100%, it means that export prices have increased more than import prices compared to the basic period. Otherwise, it means that import prices have increase compared to the basic period. When *IRSN>100%* is equivalent to *IRSN >1* there is a favorable situation, as it reflects an increase in the purchasing power of the country whose foreign trade is analyzed. And for the situation when *IRSN < 100%* is equivalent to *IRSN<1*, it means that there is an increase of import prices compared to the basic period.

3. *Foreign trade price scissors (FPCE),* is determined only if *IRSN<100%,* and it will be calculated according to the following formula:

FPCE = 100 - IRSN   (30.)

4. *Gross exchange rate on exports (CRBEX),* is determined as the ratio of the internal export price in MDL to the external price obtained at FOB (Free in Board/Franco la bord), expressed in currency:

$$CRB_{EX} = \frac{P_{EX}^{int}}{P_{EX}^{extern}} \qquad (31.)$$

After obtaining the *CRBEX* value, it is compared with the reference exchange rate existing at the moment in the analyzed country. For the Republic of Moldova 1 Euro = 17,02; 1 USD = 12,78.

5. *Net exchange rate on exports (CRNEX),* is calculated as the ratio of total internal export

price *(FOB),* expressed in MDL, decreased by a sequence *(Cmp₁ + Cmp₂).* This price is compared to the foreign price expressed in currency, decreased by a sequence *(Cmp₁ - Cmp₂),* i.e.:

$$CRN_{EX} = \frac{p_{EX}^{ici} - (Cmp_1 + Cmp_2)}{p_{EX}^{extra} - (Cmp_1 - Cmp_2)}$$ (32.)

where:

Cmp₁ – the equivalent value of an imported raw material which is included in the exported merchandise;

Cmp₂ – the equivalent value of the local raw material which is included in the exported merchandise but which could be exported independently;

Economic development level of the country depends more and more on its capacity to absorb quickly and effectively what is new and modern in terms of achievements made by other countries and also on the ability to highlight the effects of globalization and integration results in the world economy.

The multidimensional aspect of the task to increase the agricultural export potential of the Republic of Moldova requires undertaking legal efforts at state, regional and local levels related to:

1.general economic problem in terms of country's high vulnerability to the inconsistency of external economic flows;

2.the lack of production capacity use in agriculture and the need to reorient from the extensive methods assets' use to the intensive ones;

3.the lack of investment in general and especially of the synergistic effect of management practices, marketing strategies and technological know-how that complete the insertion of investments in the agricultural sector;

4.the harmonization of legislation through the creation of enabling conditions for export. But, here, the problem is much deeper and it consists in poor law enforcement practices including the delay concerning the implementation of international standards (EU market is extremely sensitive to aspects regarding the quality and safety of imported products);

5.the implementation of specific export stimulating methods such as: insurance funds, export credit funds, credit insurance funds, agricultural risk insurance funds and others;

6.the implementation of modern equipment and technology in order to manage the assets of agricultural farms by practical trainings, shared experiences, etc.

In order to elucidate the positive effects and especially the negative ones on the agri-food sector in general and on trade in particular, we'll present the SWOT analysis. This analysis will allow us to highlight the strengths and weaknesses of Moldova's agri-food trade, existing at present, but also the opportunities and risks that meanwhile could arise [9, p. 48].

Table 3. SWOT analysis of the agri-food trade in the Republic of Moldova (elaborated by author)

Strengths	Weaknesses
Agri-food exports to the EU represent 50-55% of total exports, thus confirming the dominance of the agri-food sector in country's economy; There is a persistent export level of the high added value products: wine and strong drinks, fresh and processed fruits and vegetables. Country's classification in the top 10 world countries specialized in the export of wine and top 20 world countries specialized in the export of fruits, vegetables and walnuts. The elimination of customs duties; The elimination of export quotas.	Providing poor assortment of agri-food products for export; Failure of national exporters to provide product assortment in the required quantities and terms; Non-compliance with international quality and food safety standards of the agricultural and other products; Limited production volume of the agri-food enterprises provide increased product quality and compliance with international standards. Exported agri-food products are mainly situated in the lowest segment of the target markets. The huge gap between exports and imports of agri-food products denotes that national food industry meets less and less local consumers' demands.
Opportunities	**Risks**
Diversifying the assortment of export-oriented agri-food products; Penetrating new markets; Increasing the volume and value of transactions with high added value products; Accelerating the adjustment of the regulatory framework on foreign trade to international requirements; Simplifying the procedures of commercial transactions;	Legislative instability; Financial deficiency to adjust the sanitary and phytosanitary systems of food security to international standards; Strong competition between the countries producing and exporting similar agri-food products on the market, and suppression of Moldovan exporters; Increasing demand for high quality food products on the local market will substitute a part of local products by the imported ones, thus leading to the bankruptcy of some producers activating in the food industry sector. Significant increase in imports, especially of the animal origin products;

SWOT analysis allows to focus on the key segments and to make assumptions about the segments that offer less detailed information. Due to this analysis, one could opt for penetrating international markets. Therefore, if the agri-food trade records successful penetration on the international markets, there will be an increase in the export volume and value of local agri-food products, enhanced attraction of investment and new technologies in order to increase agricultural productivity and finally, all influencing the increase of farmers' income and wealth.

The strengths and weaknesses are related to the development level of the agri-food sector and its potential, but also to its level of competitiveness. The opportunities and risks come from the market environment and competition (Table 3).

CONCLUSIONS

Performing the analysis of indicators expressing the development level of foreign trade, we can see that trade development level decreased in 2011 compared to the years 2010, 2009 and 2005 constituting 2.19, 1.62 and 1.37 respectively. In the Republic of Moldova, the volume of imports compared to the volume of exports in 2011, 2010, 2009 and 2005 was 2.34, 2.50, 2.56, 2.10 times higher. The indicators calculated in the analyzed period do not record essential deviations when comparing 2011 to 2010 and were 0.16 times lower; when compared to 2009 they were 0.22 times lower and compared to 2005 they were 0,24 times lower per capita. It should be noted that the Republic of Moldova recorded a lower indicator of trade intensity than the neighbouring countries. In 2011, Romania recorded an indicator (of the two components) in the amount of 1.22 per capita, Ukraine - 1.21, Republic of Belarus - 1.10, Poland - 1.10, Estonia - 1.04, etc.

Analyzing the share of exports in GDP or the economic openness degree in the Republic of Moldova, we found that this indicator constitutes 32.91%. The indicator of economic openness degree reveals country's capacity to commercialize on a foreign market in terms of increasing global competition. Simultaneously, the indicator of the economic openness degree, reveals the relative level of country's dependency on the foreign sale markets, and namely the ability to valorize its commodity goods.

Making the calculation and analysis of Moldova's GDP completion rate by the imported goods, we could note that it constituted 77.07%. Its relevant share represents country's dependency on the foreign supply markets and/or orientation of its economy towards import. Also, it shows GDP share achieved via imports, which means that payment depends on the currency obtained from the export of goods, export of services, attraction of FDI or other similar sources. Strong dependency of a country on the import of goods and raw materials can induce a fragile character of the long-term economic development and growth model.

After estimating the share of world imports, we can mention that they provide the opportunity to highlight the relative size of national markets for potential market entrants. For example, in 2011, Ukraine's share in the world imports was of 0.45%, Romania - 0.41%, Turkmenistan - 0.036%, Belarus - 0.25%, Armenia - 0.022%, Russian Federation - 1.67%, USA - 12.34%, while the share of the Republic of Moldova constituted 0.028% in total world imports.

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