THE COMPETITIVENESS OF AGRICULTURAL AND FOOD PRODUCTS OF MOLDOVA ON THE FOREIGN MARKETS: ASPECTS AND TENDENCIES

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ABSTRACT

Competitiveness has become a key issue on international markets since it can be considered as the major source of export development. A country that utilizes the best its resources within its agricultural sector may benefit from comparative advantage on international agricultural markets. The paper analyzes the agricultural and food trade of Moldova from different aspects of inter and intra industry trade. The aim is to estimate the trend and extent of inter and intra-industry trade in agricultural and food products of Moldova. The time series from 2001 to 2015 are examined. Moldova's share on agri-food exports is still large, but various changes occurred in the total value and the geographical structure of trade flows during the analyzed period. The analysis of competitiveness was through estimation of intra - industrial and inter- industrial trade indices (Relative Trade Advantages (RTA), Grubel-Lloyd (GL)). The obtained results indicate which agri-food products were competitive, which had relative advantages and a potential to increase its competitiveness. The level of intra-industry trade in agricultural and food products for Moldova is quite high (78%). The results of the intra-industrial trade level indicated a decrease in European Union (EU) countries and increase in relation with Commonwealth of Independent States (CIS) countries. For most commodity groups the GL values presented average high variability over time, fact which reflected the structural changes in Moldavian agri-food trade.

Key words: *agriculture, food, intra-industry, inter-industry, trade.*

INTRODUCTION

Competitiveness is a key issue in international markets and a major source for a country's export development. When one country can utilize in the best way its scarce resources in the agricultural sector, it can have a significant comparative advantage on foreign agricultural markets (Yercan, 2006). For Moldova and other countries in transition, many changes during the transformation process to a market economy in the agricultural and food trade environment had occurred. One of the reasons was due to the level of economic and social development, but an important

part of the transformation process was due to trade liberalization (Bonjec, 2007; Levkovich, 2007). In this paper we focus on the agri-food sector of Moldova. The main objective is to assess the competitiveness of the local agri-food products on foreign markets. The paper investigates the agricultural and food trade of Moldova from different aspects of inter and intra industry trade. The aim is to estimate the trend and extent of inter and intra-industry trade in agricultural and food products of Moldova. The time series from 2001 to 2015 are examined.

MATERIALS AND METHODS

For the analysis indicators of inter and intra industry trade were used. For the appreciation of the country's comparative advantage (or a particular sector) Bela Balassa (1965) elaborated the method that reveals the "Revealed Comparative Advantages" (RCA). This method is based on the assumption that the implicit comparative advantages find their reflection directly in the trade flows. According to Balassa, comparative advantages are manifested in relatively high shares of a particular product/sector in the structure of exports. In the same time the relative limitations are reflected through low shares of a product/sector. The RCA index or Balassa index is an indicator that characterizes the ratio of a commodity i in the total amount of country's exports and the share of this commodity in the total amount of world's exports. This index is based on observed trade patterns. This index is defined as:

$$B = (X_{ij}/X_{it})/(X_{nj}/X_{nt}) \qquad (1)$$

Where:

X – export; i – a country; j – a commodity; t – a set of commodities; n - a set of countries.

If B>1, then a comparative advantage is revealed. The standard deviation of this index across products can be used as measure of the comparative importance of inter-industry specialization or intra-industry trade. An alternative specialization of revealed comparative advantage was developed by Vollrath (1991) and was called Relative Trade Advantage (RTA). The RTA index is calculated as the difference between relative export advantage (RXA) or Balassa index and relative import advantage (RMA):

$$RTA = RXA - RMA \qquad (2)$$

$$\text{Where, } RXA = B = (X_{ij}/X_{it})/(X_{nj}/X_{nt}); \qquad (3)$$

$$RMA = (M_{ij}/M_{it})/(M_{nj}/M_{nt}); \qquad (4)$$

M – import.

The positive value of RTA indicates comparative trade advantages, while negative value indicates comparative trade disadvantages. When RTA is greater than zero, then a comparative advantage is revealed, which means that a sector of the country is relatively more competitive in terms of trade.

The most common index used to measure the intra-industry trade is the Grubel-Lloyd (1975) index. To calculate the intra-industry trade level (IIT) for an industry *i* will be:

$$GLIIT_i = \frac{(X_i+M_i)-|X_i-M_i|}{(X_i+M_i)} \times 100 \qquad (5)$$

or, it can be written as:

$$GLIIT_i = (1 - \frac{|X_i-M_i|}{X_i+M_i}) \times 100, \qquad (6)$$

where $GLIIT_i$ is the Grubel Lloyd index of intra-industry trade i, X_i and M_i represents the values of exports and imports in industry i.

GL index can take values from 0 to 100. When the GLIT value is zero it indicates that there is no IIT (because exports or imports are zero). When the value is equal to zero, then all trade is IIT (exports equals' imports).

This paper is based on secondary data from the National Bureau of Statistics (NBS). The research focuses on Moldova's intra-industry and inter-industry trade in agricultural and food commodities, analyzing time series from 2001 to 2015

In the present paper the 24 chapters, according to international nomenclature for the classification of products Harmonized Sections (HS) 2012 in two digits for agricultural and food products were analyzed.

RESULTS AND DISCUSSION

A central place in Moldova's economy belongs to the agri-food sector. According to the data from National Bureau of Statistics the share of the agricultural sector in the Gross Domestic Product (GDP), which together with food processing industry is about 35%, while agricultural products and foodstuffs are country's main export articles having a share of 40% in total exports. As well, about one third of population is employed in this sector.

Agri-food products are main exports commodities having a share of 45% in total exports. Unfortunately, their share diminished during the analyzed period with 18%, fact which affected the agri-food trade balance. Analyzing the trends in Moldova's foreign trade, during the covered time series period an increasing in value of both exports and imports is observed. Exports increased with 11% and imports with 13%, the overall trade balance remaining negative.
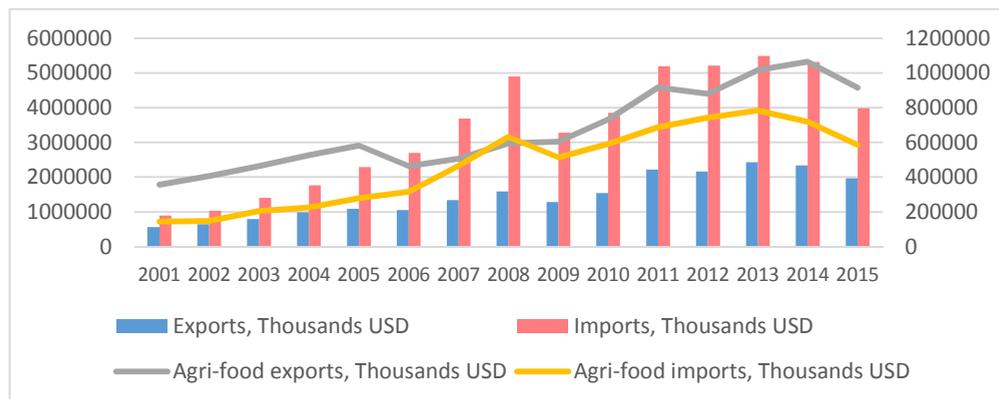

Figure 1. Dynamics of Moldova's trade flows, 2001-2015
*Source: Based on data from National Bureau of Statistics (2017).

Summarizing the evolution of agri-food trade flows, also an increasing trend is noticed in agri-food exports from 356857 thousands USD in 2001 to 914488 thousands USD in 2015. In 2006-2007 a slight decrease in agri-food exports was noticed, as result of Russia's first interdiction on wines, which is one of the main trade partners for Moldova.

The geographical structure also experienced many changes during the analyzed period. Most of agri-food exports until 2006 were oriented to CIS markets. After 2007 a large increase of trade flows with EU countries was accentuated, and a decrease of dependence from CIS markets. This was particularly due to various facilities from EU as through General System of Preferences (GSP+) in 2006 and Autonomous Trade Preferences (ATP) in 2008. Preferences were given for alcoholic drinks, sugar and some agricultural products and others. In 2014 Moldova signed a Deep and Comprehensive Free Trade Agreement (DCFTA) with EU that contributes to more trade liberalization with EU.

The EU market is highly competitive and imposes barriers to enter in terms of quality and food safety, thus a boost in the competitiveness of the exported Moldavian agri-food products is desired, and the full use of the actual potential to increase the trade relations with EU.

Besides strong trade relations with Romania among EU countries as neighboring country, also important partners are Italy, UK, Germany, Poland, France, Greece and Austria. The share of agri-food export to these countries is 85%.

Competitiveness of Moldova's agricultural and food products was assessed in the long run based on the RTA index results, in relation with both EU and CIS countries (Table 1).

According to the results (Table 1), we can delimitate three trends in the competitiveness of the agricultural and food products of Moldova. Within the EU countries competitive advantages are observed among the following aggregations: dairy produce, products of animal origin, live trees, edible vegetables, cereals, oil seeds, preparations of meat, beverages. Total disadvantages are characterized for the following aggregations: fish, coffee, tea, animal or vegetable fats, cocoa, vegetable planting materials and preparation of cereals. In the analysis some aggregations register positive values in some years and negatives in others. Thus the switching values observed denote a possibility for the increase in competitiveness of these agricultural and food products. Switching values are typical for live animals, meat, edible fruit and nuts, sugars, preparation of vegetables and tobacco.

Table 1. Competitiveness of Moldova's agricultural and food products with EU and CIS countries, based on RTA index.

HS code	2001-2007		2008-2015		2001-2015	
	EU	CIS	EU	CIS	EU	CIS
01 Live animals	51,83	-79,80	3386,77	-32,90	1830,47	-54,79
02 Meat and edible meat offal	19,85	-4885,02	2513,24	-8,62	1349,66	-2284,27
03 Fish and fish products	-0,57	-0,20	-0,94	1,75	-0,77	0,84
04 Dairy, eggs; honey etc	-0,59	7,57	3,26	-0,02	1,47	3,53
05 Products of animal origin	-0,10	-17,67	0,90	-150,87	0,43	-88,71
06 Live trees, cut flowers	1,49	-25,55	3,87	-12,75	2,76	-18,72
07 Edible vegetables etc	0,03	-14,09	5,82	-7,30	3,12	-10,47
08 Edible fruit and nuts	-0,43	-1,66	0,05	-9,83	-0,18	-6,02
09 Coffee, tea, mate	-0,34	6,85	-0,30	4,89	-0,32	5,81
10 Cereals	-4,57	0,21	-0,38	1,68	-2,33	0,99
11 Milling products; malt; starches;	-0,45	7,50	-1,20	15,63	-0,85	11,84
12 Oil seeds, seeds etc	-0,38	-1,57	0,08	-2,18	-0,13	-1,89
13 Lac; gums, resins	0,19	-17,43	3,77	-43,35	2,10	-31,25
14 Vegetable planting materials	-2,08	-0,19	-4,60	-35,83	-3,43	-19,20
15 Animal or vegetable fats, etc.	-0,36	0,26	-1,38	31,90	-0,90	17,13
16 Preparations of meat, of fish	193,75	-0,32	254,63	1,28	226,22	0,53
17 Sugars and sugar confectionery	-1,46	7,64	-0,51	3,50	-0,95	5,43
18 Cocoa and cocoa preparations	-1,96	3,48	-1,17	2,07	-1,54	2,73
19 Preparations of cereals, flour	-0,88	1,12	-0,76	5,44	-0,81	3,42
20 Preparations of vegetables	-0,18	-0,20	0,05	-0,30	-0,06	-0,25
21 Miscellaneous edible preparations	-0,35	9,11	2,01	3,38	0,91	6,05
22 Beverages, spirits and vinegar	4,90	-0,26	1,74	-0,27	3,21	-0,26
23 Residues food industry etc	0,21	0,32	1,27	6,91	0,78	3,83
24 Tobacco etc	1,65	0,19	0,90	0,55	1,25	0,38

*Source: Authors calculations based on data from NBS (2017).

In relation with CIS countries a trade advantage is present in the case of the aggregations milling products, animal or vegetable fats, preparations of meat, cocoa, and tobacco. A low level of competitiveness is characteristic for the aggregations live animals, fish, dairy produce, products of animal origin, coffee, tea, cereals, sugars and preparations of vegetables. The switching values in the results of the RTA index are regard the following aggregations: meat, live trees, edible vegetables, edible fruits, oil seeds, preparations of meat, preparations of cereals, and beverages. Total disadvantages that are common for both CIS and EU

countries are regard the following aggregations: HS 09, HS03 and HS14. These are mainly exotic imports products that are not produced in Moldova. Among switching values common for both EU and CIS countries is HS02 (meat and edible meat offal), whose competitiveness could be improved. Among the most discussed issues related to world trade trends in the economic literature belongs to intra-industry trade (IIT). It can be explained as the simultaneous flows of imports and exports of commodities within the same industry group. It emphasizes trade in products that are similar but slightly differentiated based on imperfect competition or close substitutes goods demanded in different countries by consumers with distinct preferences. According to the results (Table 2) the level of intra-industry trade in agricultural and food products for Moldova is quite high. From total trade in this sector, 78% belongs to the intra-industry type.

Table 2. Intra-industrial trade with agricultural and food products between Moldova and all trade partners.

HS code	2001-2007	2008-2015	2001-2015
01 Live animals	72.3	66.9	69.4
02 Meat and edible meat offal	50.1	52.5	51.3
03 Fish and fish products	3.9	0.58	2.1
04 Dairy, eggs; honey etc	69.3	46.09	56.9
05 Products of animal origin	8.1	17.9	13.3
06 Live trees, cut flowers	37.6	25.5	31.2
07 Edible vegetables etc	62.2	52.4	57.02
08 Edible fruit and nuts	39.7	51.3	45.9
09 Coffee, tea, mate	13.7	9.02	11.2
10 Cereals	43.6	30.4	36.5
11 Milling products; malt; starches;	6.8	9.02	7.9
12 Oil seeds, seeds etc	67.3	34.06	49.5
13 Lac; gums, resins	1.3	4.4	3.01
14 Vegetable plaiting materials	67.5	39.1	52.3
15 Animal or vegetable fats etc	44.2	53.4	49.1
16 Preparations of meat, of fish	52.5	4.9	27.1
17 Sugars and sugar confectionery	76.7	71.8	74.1
18 Cocoa and cocoa preparations	24.8	28.4	26.8
19 Preparations of cereals, flour	46.5	45.1	45.8
20 Preparations of vegetables	35.3	57.2	47.04
21 Miscellaneous edible preparations	18.7	17.7	18.2
22 Beverages, spirits and vinegar	24.9	45.7	36.02
23 Residues food industry etc	74.2	82.5	78.7
24 Tobacco etc	54.6	43.6	48.7
01-15 Agricultural products	82.5	79.6	81.0
16-24 Food products	58.3	96.6	78.8
01-24 Total agricultural and food products	67.6	87.6	78.3

*Source: Authors calculations based on data from NBS (2017).

For some commodity groups the GL values present high variability over time, fact which reflects the structural changes in Moldavian agri-food trade. High and average magnitudes of intra-industry trade presents the following commodities: live animals, meat, dairy, eggs, honey, edible vegetable, edible fruit and nuts, oil seeds, vegetable planting materials, animal or vegetable fats, sugars, preparations of cereals, preparations of vegetables, residues food industry, tobacco. Low levels of intra-industry trade exhibits commodities as fish, products of animal origin, coffee, tea, mate, milling products, malt, starches. The commodities with low levels are mostly imported, mainly exotic products that are not produced in Moldova.

During the analyzed time series, the GL index tends to decrease with EU countries and increase in relation with CIS countries (Figure 2). The downward trend for EU countries, regarding exports can be explained as the lack of competitiveness for Moldavian agricultural and food products which makes it difficult to access those markets. The upward trend in relation to CIS countries might be caused by the increase of imports from those countries, mainly Ukraine.
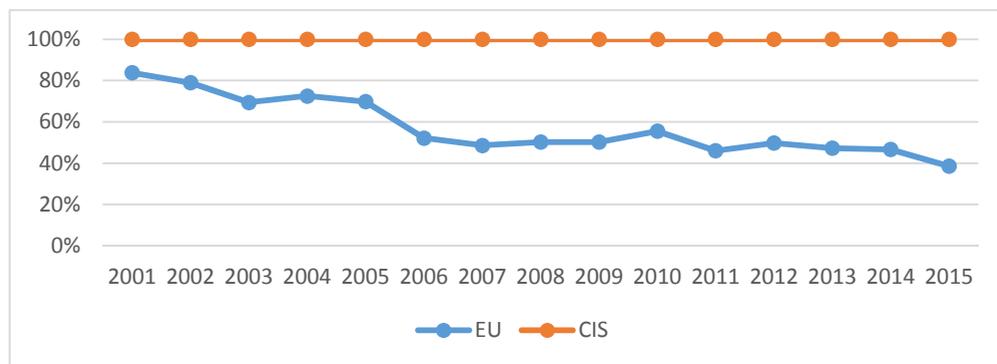

Figure 2. Intra-industry trade with agricultural and food products in relation to EU and CIS countries (2001-2015).
*Source: Authors calculations.

CONCLUSIONS

Moldova's agri-food trade flows experiences important changes during the investigated period. Both Moldova's exports and imports flows increased considerably, while agri-food imports increased faster than exports.

The agricultural and food trade of Moldova is specializing continuously and its competitive advantages are not enough stable. Thus, besides the agricultural and food products that have a clear defined advantage, were identified a list of aggregations that have switching values with a possibility of increase in their competitiveness. Trade advantages (according to RTA results) are different for EU and CIS countries. Comparative advantages with EU countries were identified for some commodities as: dairy produce, live trees and other plants, edible vegetables, cereals, oil seeds, beverages etc. In relations with CIS countries of comparative advantages benefit mostly commodities as: animal or vegetable fats and oils,

preparations of meat, tobacco and others. Negative values for both CIS and EU countries are identified in the case of coffee, tea, fish and crustaceans, vegetable planting materials.

The level of intra-industry trade in agricultural and food products for Moldova is quite high (78%). The results of the intra-industrial level (GL) indicate a decrease with EU countries and increase in relation with CIS countries. The downward trend for EU countries, regarding exports can be explained as the lack of competitiveness for Moldavian agricultural and food products which make it difficult to access those markets. For most commodity groups the GL values present average high variability over time, fact which reflects the structural changes in Moldavian agri-food trade.

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