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THE COMPETITIVENESS OF MOLDOVA'S AGRI-FOOD TRADE WITH E.U. AFTER DCFTA IMPLEMENTATION

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Abstract: *This paper analyzes the changes that occurred in Moldova's trade of agricultural and food products since the implementation of the Deep and Comprehensive Free Trade Agreement (DCFTA) with European Union. The research will include the analysis of Moldova's foreign trade activity from the perspective of agricultural and food products, the changes that occurred in their structure, dynamics and competitiveness. The data used will underline the period 2015-2019, regarding the agricultural and food trade commodities. The competitiveness will be assessed through trade indicators as Revealed Symmetric Comparative Advantages (RSCA) and Trade Balance Index (TBI) based on product mapping approach. As result we delimitate four groups of products classified according to their comparative advantages/disadvantages and export specialization. By analyzing the obtained results we have found three agri-food products that have comparative advantages and are net exporters on E.U. market. About half of agri-food products that fall into the category of comparative advantage but are net importers. The competitiveness of this group has potential to grow and it could be improved.*

Key Words: *agri-food products, competitiveness, trade.*

Classification JEL: Q17, F10

INTRODUCTION

The transformation process and dynamic changes that occurred over the last decades imposed certain adjustments particularly for Eastern European countries. These adjustments refer also to the opportunities and threats of the agri-food sector that experience difficulties in assessing its competitive position on world markets. The term of competitiveness was widely discussed among economists. According to Freebairn (1986), competitiveness is an indicator of the “ability to supply goods and services in the location and form and at the time they are sought by buyers, at prices that are as good or better than those of other potential suppliers, while earning at least the opportunity cost of returns on resources employed”.

Competitiveness and comparative advantage terms are related, both implying general equilibrium concept. However, competitiveness is a more broad definition, including also the distortions that might arise in the marketplace. Many studies imply the concept of competitiveness to analyze the performance of an sector or industry through all aggregate outputs or the main commodities (Frohberg and Hartmann, 1997).

According to trade theory, (international) competitiveness is based on the concept of comparative advantage (Latruffe, 2010). In this case, competitiveness is regarded as the country's ability to utilize efficiently its available resources and as result to benefit from a comparative advantage of the world market. In order to benefit from increased export activity is important to focus on the competitive

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segments of agri-food production that have comparative or absolute advantages in relation to the main trading partners (Ortikov, 2019).

Agricultural and food commodities represent Moldova's the main exported goods. The trade structure and territorial distribution of agri-food commodities had experienced modifications during the last decade. Until 2005, C.I.S. used to be the main market for Moldova's agricultural and food products. Due to certain events and some trade preferences agreements(GSP+, ATP) slowly the trade relations with E.U. market became closer (Cimpoies, 2015, 2016). After signing the DCFTA agreement with E.U. in 2014, bilateral trade flows largely increased. Thus, the aim of this paper is to assess the major changes that experienced Moldova since the DCFTA was implemented.

MATERIAL AND METHODS

In this paper the competitiveness of agri-food products will be estimated based on trade indicators. There are different approaches to estimate a country's trade competitiveness and advantages on world markets. One of the main indicators that allows to estimate the comparative advantages of a country or sector was introduced by Balassa (1965), called "Revealed Comparative Advantages" (RCA). Based on Balassa's approach the comparative advantages are revealed through the high share of a certain good/sector or its disadvantages reflected in low shares in the country's total exports (Balassa, 1991). Relative Comparative Advantages index (Balassa index) indicates the ratio of a commodity i in the total amount of country's exports and the share of this good in the total amount of world's exports. It can be computed as:

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

where,

If RCA take values greater than one, a country presents comparative advantages in a group of products, and it presents disadvantages when this value is smaller than one.

It is considered that the values of RCA index is not possible to compare on both sides of one (Widodo, 2009). Thus, a better approach is considered the Revealed Symmetric Comparative Advantage (RSCA) index (Dalum and Laursen,1998). The RSCA is computed as:

$$RSCA_{ij} = (RCA_{ij} - 1)/(RCA_{ij} + 1) \quad (2)$$

This index take values situated between minus one to greater than one. This implies that when $RSCA_{ij}$ is greater than zero country i has comparative advantage within the group of products j . The opposite is true when the index values are less than zero.

Another important trade indicator that allows to establish if a country is specialized in export/import for a specific product is Total Balance Index (TBI) (Lafay, 1992). TBI index allows to determine if a country is net exporter or net importer for certain group of products. TBI can be computed as:

$$TBI_{ij} = (X_{ij} - M_{ij})/(X_{ij} + M_{ij}) \quad (3)$$

where, X_{ij} and M_{ij} represent the export and import flows of country i among the group of products j . Trade Balance Index values are situated below or over one. For values smaller than 1 the country is considered net importer and for values over 1 the country is a net exporter (Lafay, 1992).

In order to assess the country's competitiveness "product mapping" tool was used. The product mapping is based on the RSCA and TBI index and allows to divide the commodities into four groups

creating a “matrix”: A, B, C and D (Widodo, 2009). According to this “matrix” classification approach in group A commodities with comparative advantage and export specialization are included; in group B – commodities with comparative advantage but with lack of export specialization. For both group C and D commodities without a comparative advantage are included. The commodities in group C will have export specialization, while group D will lack export specialization (Widodo, 2009). The “product mapping” is presented in Table 1.

Table 1. Product mapping approach

RSCA >0	Group B: Comparative advantage Net-importer (RSCA>0 and TBI<0)		Group A: Comparative Advantage Net exporter (RSCA>0 and TBI>0)	
	Group D: Comparative disadvantage Net-importer (RTA<0 and TBI<0)		Group C: Comparative disadvantage Net exporter (RTA<0 and TBI>0)	
RSCA <0	TBI<0		TBI>0	

Source: Widodo (2009)

This paper is based on the analysis of agri-food trade flows with E.U. The data includes an analysis of trade flows after signing the DCFTA agreement with E.U. Data are related to the 24 harmonized sections that belong agri-food products, divided in agricultural (HS 01-15) and food products (HS 16-24). The data were provided from National Bureau of Statistics (NBS), UN Comtrade database.

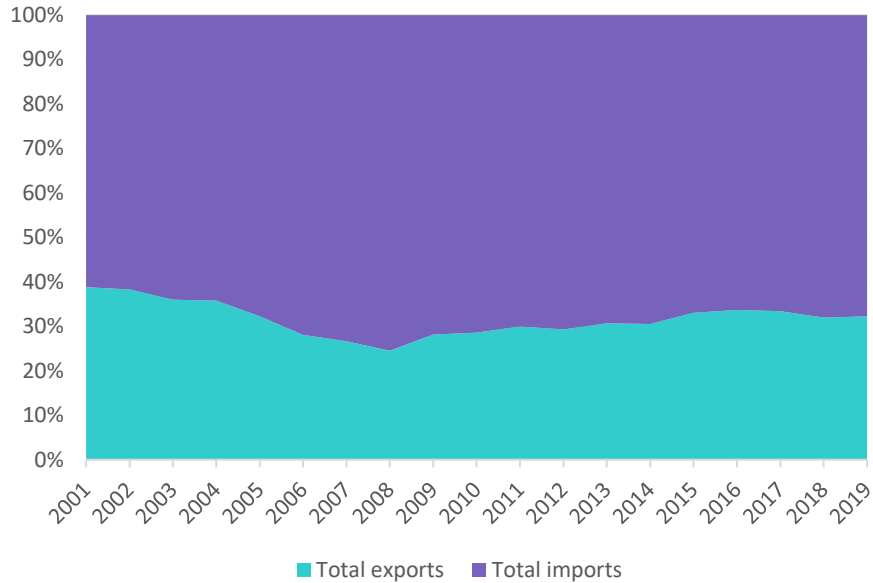
RESULTS AND DISCUSSIONS

Trade liberalization and economic transformations affected Moldova’s foreign trade dynamics and its distribution on the main partners. Currently Moldova is still experiencing a negative trade balance due its disadvantages of endowment in natural resources that leads to large amount of imports (mainly gas and other energetic resources). A major export share in Moldova’s trade activity is represented by the agricultural and food products. Its amount was slightly decreasing during the last decade but it still maintains about half of country’s exports.

The amount of total exported goods and services constituted 2779 million US dollars, while imports amounted 5842 million US dollars. Both exports and imports increased during 2001-2019 (Fig. 1).

Also, both trade flows increased during 2015-2019 comparing to its value in earlier period (2001-2014). In this case it should be mentioned that the value of total exports increased by 66 percent, while imports had grown by 45 percent.

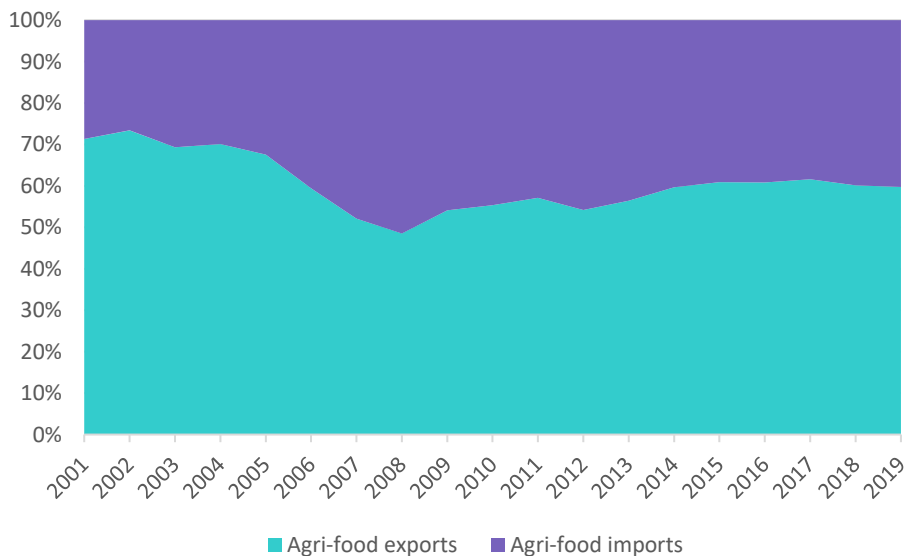
Figure 1. Dynamics of Moldova's trade flows, 2001-2019



Source: based on data from National Bureau of Statistics

A similar trend is observed in the case of the agri-food trade flows. Exports of agricultural and food products represent 43 percent from overall traded commodities (2019). In average during 2015-2019 the agri-food commodities in overall exports had a share of 45 percent. Agri-food imports represent 14 percent in total imported goods. Both agri-food exports and imports increased in 2015-2019 comparing to the earlier period by 64 and 41 percent (Fig. 2). In total agri-food trade flows a greater share is represented by agricultural products (HS 01-15), while food products (HS 16-24) represent about 30 percent in 2019. Exports with agricultural products increased slowly after 2008, while imports of food products present an increasing trend since 2005.

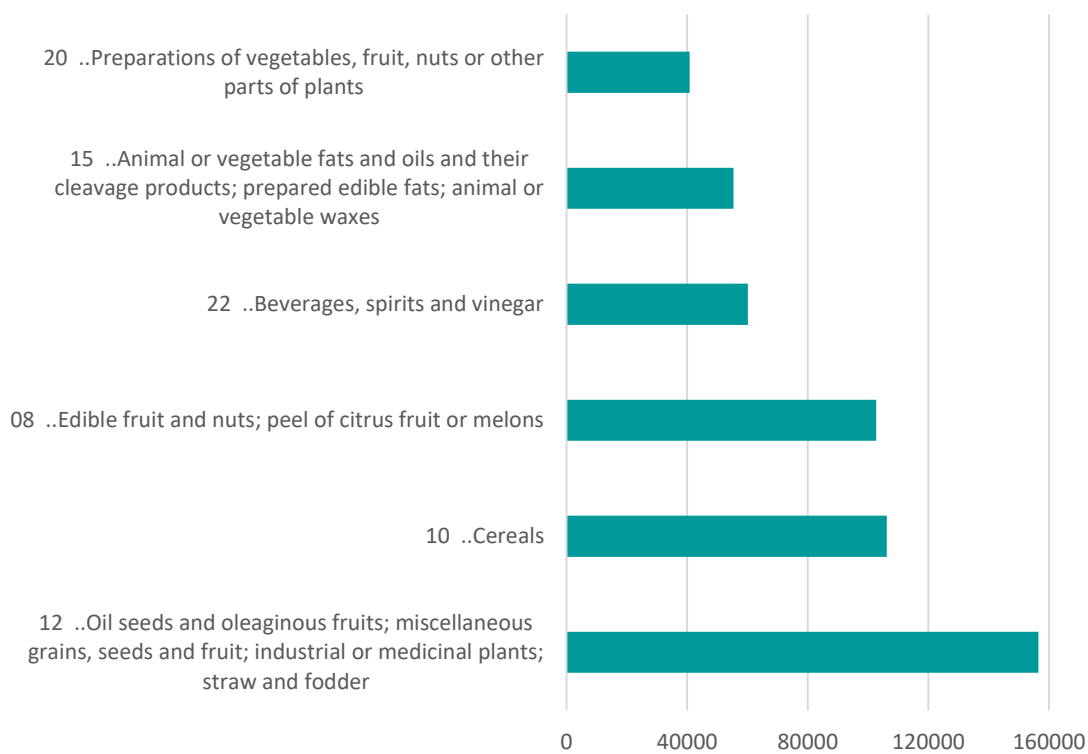
Figure 2. Dynamics of Moldova's trade flows with agricultural and food products, 2001-2019



Source: based on data from National Bureau of Statistics

Moldavian trade flows with E.U. countries had experienced great changes over the last two decades. An increase in trade flows to E.U. market was first noticed after 2005 when during a first interdiction the country had to reconsider its trade partners. The enlargement of E.U. family in 2007 by the accession of Romania and Bulgaria (important trade partners for Moldova) also contributed to a new increase in trade flows towards and from E.U. countries (Cimpoies, 2013). Also Moldova benefits from a greater access to the E.U. market from General System of Preferences (GSP+) since 2006 and Autonomous Trade Preferences in 2008. This contributed to the increase of trade flows to E.U. countries through free trade advantage regarding to certain products as beverages, some agricultural products, sugar etc. In 2014 Moldova signed a Deep and Comprehensive Free Trade Agreement that increase even more the advantages from a free trade with E.U. countries (Cimpoies, 2019).

Figure 3. Most exported agricultural and food products of Moldova to the E.U. market after DCFTA, average values 2015-2019

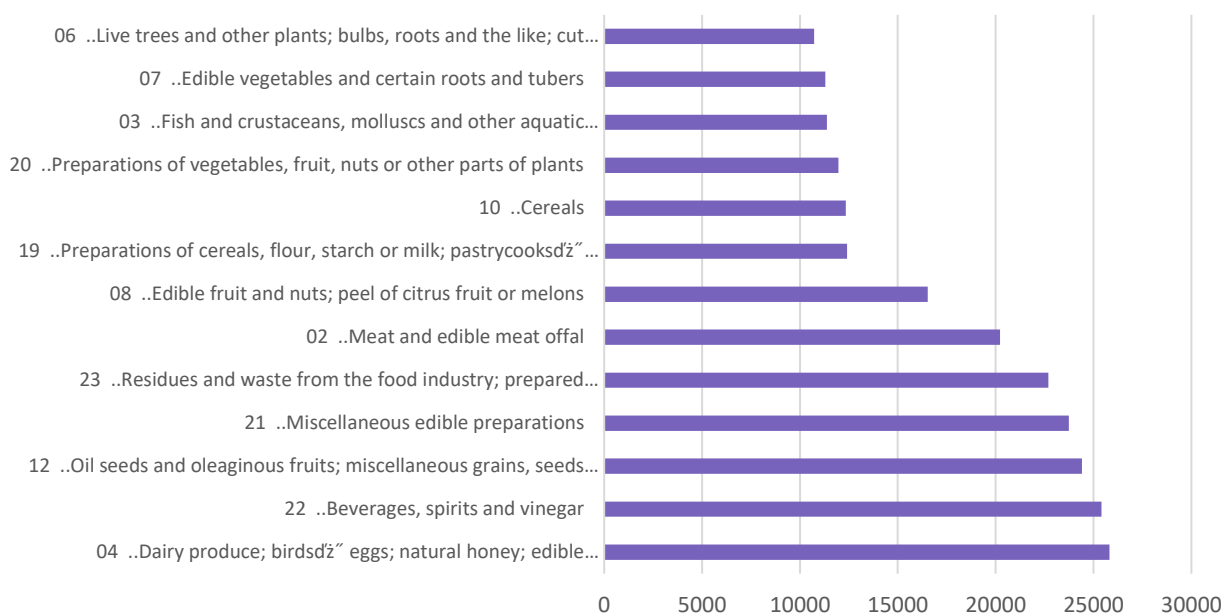


Source: based on data from National Bureau of Statistics

The structure of the most exported agri-food products during 2015-2019 (Fig. 3) did not experience significant changes. As before, six commodities represent 85 percent in total exported agri-food products. Currently, the leading place is for oil seeds and oleaginous fruits, cereals, edible fruit and nuts, followed by beverages.

In the same time, we could mention that the structure of agricultural and food imports is more diverse (Fig. 4). About 70 percent of the agri-food imports belong to thirteen commodities as: dairy products, beverages, oil seeds and oleaginous fruits etc. From these 40 percent belong to agricultural products.

Figure 4. Most imported agricultural and food products of Moldova from the E.U. market after DCFTA, average values 2015-2019



Source: based on data from National Bureau of Statistics

Table 2. The agricultural and food trade commodity structure with E.U. after DCFTA (average 2015-2019)

	Group B:					Group A:				
	HS	Exports	Share in exports	Imports	Share in imports	HS	Exports	Share in export	Imports	Share in imports
RSCA>0	01	0.04	0.00	6,097.87	2.1	08	102,721.15	17.69	16,535.69	5.7
	02	2.90	0.00	20,224.82	6.9	17	19,408.09	3.34	8,397.72	2.9
	04	10,504.4	1.81	25,817.32	8.9	20	40,801.49	7.03	11,967.17	4.1
	05	36.01	0.01	4,749.69	1.6					
	06	279.75	0.05	10,724.01	3.7					
	07	2,827.65	0.49	11,289.88	3.9					
	10	106,234.96	18.30	12,341.94	4.2					
	12	156,468.28	26.95	24,407.30	8.4					
	16	0.29	0.00	7,519.54	2.6					
	21	1,358.89	0.23	23,745.97	8.2					
	23	3,945.75	0.68	22,696.58	7.8					
	24	1,572.72	0.27	10,278.15	3.5					
	RSCA<0	Group D:					Group C:			
HS		Exports	Share in export	imports	Share in imports	HS	Exports	Share in export	imports	Share in imports
03		30.00	0.01	11,380.53	3.9	14	164.06	0.03	9.36	0.3
09		1,550.01	0.27	6,895.23	2.4	15	55,411.03	9.54	5,708.05	2.0
11		998.12	0.17	3,936.49	1.4	22	60,181.60	10.37	25,411.11	8.7
13		2.95	0.00	804.14	0.3					
18	4,117.75	0.71	7,913.67	2.7						
19	11,947.72	2.06	12,410.81	4.3						
	TBI <0					TBI >0				

Source: own calculations

Moldova's export competitiveness is characterized by exports heterogeneity (the structure of agri-food exports is represented by only few aggregations).

According to the obtained results of "product mapping" there were not many changes in the agri-food products competitiveness before and after DCFTA implementation. Moldova's comparative advantage is still maintained by few commodities (Table 2). The majority of commodities that characterize Moldova's agri-food trade structure with E.U. are included in group A and B. The dominant positions nevertheless had changed. The advantages before were maintained by products as cereals, oil seeds and oleaginous fruits, beverages. Nevertheless the structure of this group changed after DCFTA implementation in favor of edible fruits and nuts, sugar, preparations of vegetables, fruits and nuts. The largest share of commodities in "product mapping" are part of group B with comparative advantage but net importer. The structure of this group did not change much before and after DCFTA, being included dairy products, products of animal origin, live trees, edible vegetables, tobacco etc. Moldova has trade comparative disadvantage but is a net exporter (group C) of three commodities after DCFTA: vegetable planting materials, animal or vegetable fats or oils, beverages. Comparative disadvantage and net importer for Moldova is characteristic for some specific aggregations, mostly imported "exotic" commodities as fish products, coffee and tea, cocoa. This group has the smallest share in both exports and imports of agri-food products.

CONCLUSIONS

In average during the analyzed time series the share of agri-food products in total exports represent almost half of total exported goods. The share of agri-food imports is about 14 percent. Both agri-food exports and imports increased in the examined period. The structure of the most exported agri-food products did not experience significant changes in this period. Few commodities represent 85 percent in total exported agri-food products. Currently, the leading place is for oil seeds and oleaginous fruits, cereals, edible fruit and nuts, followed by beverages. In the same time, we could mention that the structure of agricultural and food imports is more diverse.

Moldova's export competitiveness is characterized by exports heterogeneity as the structure of agri-food exports is represented by only few aggregations.

Based on "product mapping" results Moldova's comparative advantage is maintained by few commodities. The majority of commodities that characterize Moldova's agri-food trade structure with E.U. are included in group A and B. The dominant positions are maintained by edible fruits and nuts, sugar, preparations of vegetables, fruits and nuts. The largest share of commodities in "product mapping" are part of group B with comparative advantage but net importer.

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