

**CLASSIFICATION OF THE COMPETITIVENESS' FACTORS AND NEW APPROACHES TO ASSESSING THE COMPETITIVENESS**

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*The vector of development of Moldovan economy, as well as the world economy, is unstable. In order not to be exposed to external shocks, it is necessary to ensure sustainable growth of the national economy. Only an economy that offers competitive products can achieve this goal. The object of the research is represented by the factors influencing the competitiveness of a product, and the main goals are the structuring of competitiveness factors and the development of new approaches in assessing competitive advantages. The following empirical and theoretical methods have been used in the study: observation and data collection, the method of scientific abstractions, comparative analysis, regression analysis, economic and mathematical modelling. In this article, the author has developed and applied two new ways to assess competitiveness. The study showed that the Moldovan economy is based on the production of primitive goods, while in order to achieve stable economic growth it is necessary to redirect its resources to the production of high-tech products and products with high added value.*

**Keywords:** competitiveness of goods, competitive advantage, competitive disadvantage, price, quality, psychological factors.

*Vectorul dezvoltării economiei moldovenești, precum și economiei mondiale, este instabil. Pentru a nu fi expuși șocurilor externe, este necesar de asigurat o creștere durabilă a economiei naționale. Numai o economie care oferă produse competitive poate atinge acest scop. Obiectul de cercetare reprezintă factorii competitivității bunurilor, iar scopurile principale sunt structurarea factorilor și elaborarea noilor abordări de evaluare a avantajelor competitive. Următoarele metode empirice și teoretice au fost utilizate în studiu: observația și colectarea datelor, metoda abstracției științifice, analiza comparativă, analiza regresiei, modelarea economico-matematică. În acest articol, autorul a elaborat și a aplicat două abordări noi de evaluare a competitivității. Studiul a arătat că economia Moldovei se bazează pe producerea bunurilor primitive, în timp ce pentru a obține o creștere economică stabilă este necesară redirecționarea resurselor către fabricarea produselor high-tech și bunurilor cu valoare adăugată înaltă.*

**Cuvinte-cheie:** competitivitatea bunurilor, avantaj competitive, dezavantaj competitive, preț, calitatea, factori psihologici.

*Вектор развития молдавской экономики, как и мировой экономики, нестабилен. Чтобы не подвергаться внешним шокам, необходимо обеспечить устойчивый рост национальной экономики. Только экономика, которая предлагает конкурентоспособные продукты, может достичь эту цель. Объектом исследования являются факторы влияния на конкурентоспособность товара, а основные цели – структурирование факторов конкурентоспособности и разработка новых подходов в оценке конкурентных преимуществ. В процессе исследования были использованы следующие эмпирические и теоретические методы: наблюдение и сбор данных, метод научных абстракций, сравнительный анализ, регрессионный анализ, экономико-математическое моделирование. В данной статье автор разработал и применил новые два способа оценки конкурентоспособности. Исследование показало, что молдавская экономика основывается на производстве примитивных товаров, в то время как для достижения стабильного экономического роста необходимо перенаправить свои ресурсы на производство наукоёмкой продукции и продукции с высокой добавленной стоимостью.*

**Ключевые слова:** конкурентоспособность товара, конкурентное преимущество, конкурентные недостатки, цена, качество, психологические факторы.

**JEL Classification:** M30, M31, D10.  
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### Introduction

The Republic of Moldova is an open, agrarian, vulnerable small economy, which is influenced by large open economies. The development of the Moldovan economy depends on the remittances, on the trade policy and geopolitics of neighbouring states. The domestic capital market is not attractive to foreign investments, and the banking system has not recovered yet after the theft of the billion. The degree of credibility in the domestic banking system is very low, both from residents and non-residents. The main task that Moldova is facing is to develop strategies that would ensure sustainable economic growth.

In the current period, as a result of the signing of the Association Agreement between the Republic of Moldova and the European Union (2014), there is a reorientation of the flows of goods to the European markets. But in these markets the requirements for goods are high and they are oversaturated, so it is very difficult for Moldovan products to compete with European goods not only in foreign markets, but also in the domestic market. Therefore, Moldova should implement measures that would increase the competitiveness of goods and the competitiveness of the national economy.

Since the requirements for the goods to be imported by the European Union (EU) countries and the countries of the Eurasian Economic Union (EAEU) are different, *it is necessary to examine factors of the competitiveness of goods* in order to correctly assess a competitive advantage of domestic goods and elaborate an effective strategy to promote exports to that market in which our products are more competitive.

### The scientific approach of the topic in the literature

In the scientific literature, there is no clear distinction between criteria, factors and indicators of product competitiveness. Although these concepts are different in their essence, some economists consider the separately taken competitiveness factor at the same time as both a factor and the main evaluation criterion, as an indicator.

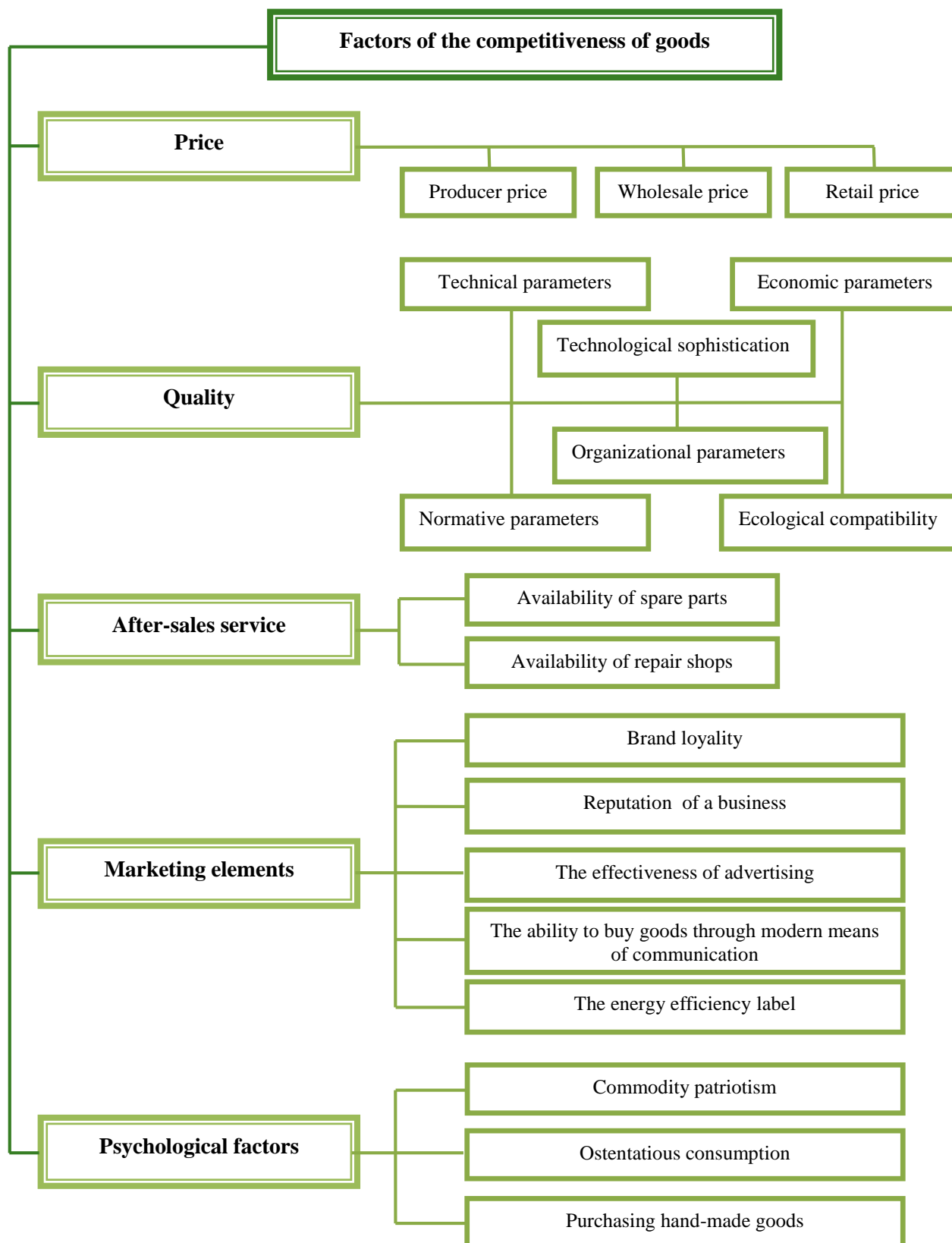
I. Lifits confuses a criterion with a factor, the economist considers that one of the criteria of the competitiveness of the good is the quality, and the factor corresponding to this criterion is a reputation of a business [8, pp. 35]. In our opinion, the quality is a factor of competitiveness, but a manufacturer's reputation is a component of group of factor: marketing elements (Figure 1).

Also, many economists, like M. Porter [3; 4], M. Zavalova [6], R. Emadakov [7], examine the factors of competitiveness of goods and by classifying these factors, aim to identify those factors that ultimately affect the competitiveness of the enterprise, but not the merchandise. As proof that the confusion of the competitiveness of the good with the competitiveness of the business is inadmissible, can serve the fact that there are two sides that interact in assessing these indicators: consumers and producers. If merchandise is competitive in opinion of the manufacturer, this does not mean that the buyer's view is identical. In the oligopolistic and monopolistic market, the manufacturer may assume that a particular product has comparative advantages, but in the mind of the buyer the good is not competitive.

Any business uses a price to maximise its profitability, to set back rivals from incoming on the market, or to grow its market share. Establishment of competitive pricing is on the agenda of any businessman. The price is the first factor which influences a consumer's decision. The lower the price is, *ceteris paribus*, the more preferable this product is for the buyer.

M. Zavalova in article „The basis of competitiveness of enterprise products” claims that the factors of competitiveness of the good are: „price, quality, cost of consumption, quality of service and marketing activities to promote products on the market” [6, pp. 87]. Neither the mentioned scientist nor other scholars are studying psychological factors as factors of product competitiveness. In our opinion, it is wrong to neglect the fifth pillar (Figure 1).

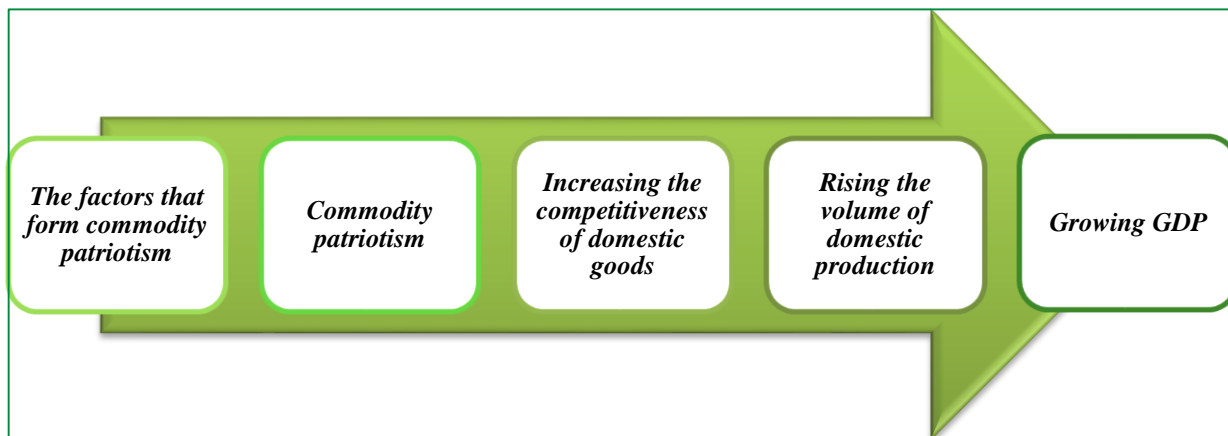
The classification proposed by the author differs from those found in the literature. It contains a new group of factors of competitiveness of goods: psychological factors. For example, the term of commodity patriotism couldn't be found in any compartment of economic sciences, because it is a new term. This one is different from the term of brand loyalty and the buyer's loyalty to a particular bidder, since the latter two are being studied in the context of maximizing the enterprise's profit and increasing the competitiveness of the business, but not in the context of raising the product competitiveness.



**Figure 1. Factors of the competitiveness of goods**

Source: Elaborated by the author.

In author's opinion, the commodity patriotism indicates the degree of preference of citizens to buy domestic and not foreign goods. The model of commodity patriotism is given in Figure 2.



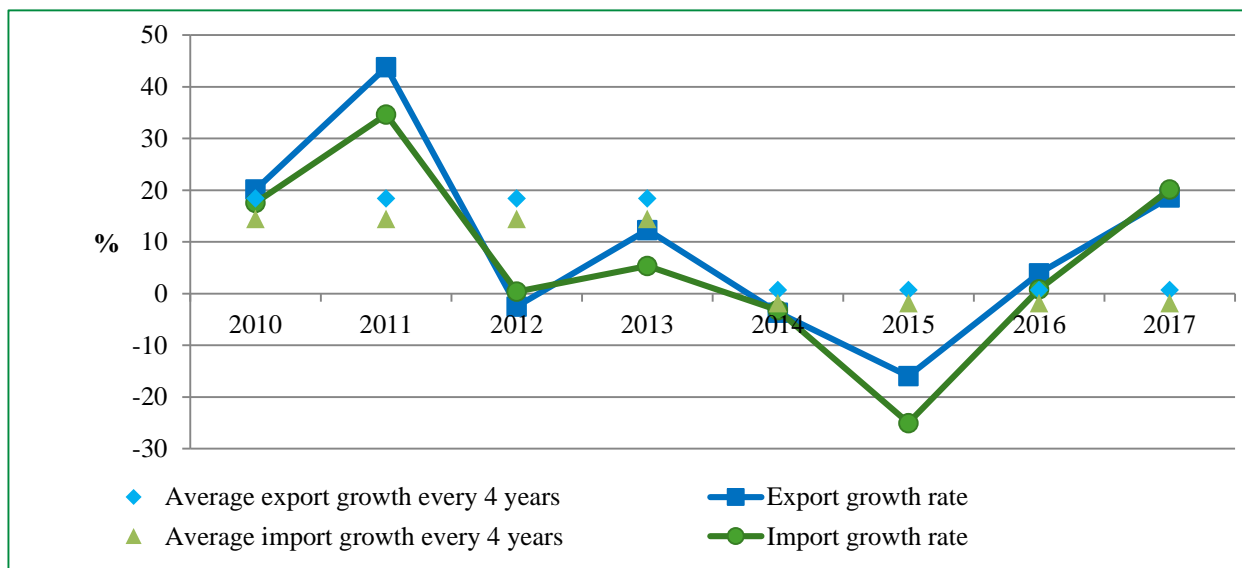
**Figure 2. Model of commodity patriotism**

Source: Elaborated by the author.

Commodity patriotism like all other factor of influence leads to growth the goods' competitiveness and GDP.

**Analyse the competitiveness of Moldovan commodity goods**

The foreign trade of the Republic of Moldova in the last eight years has evolved unevenly. The author carried out the comparative analysis of the growth rate of export and import until and after Association (Figure 3). The average export growth rate in 2010-2013 is 17.71 percentage points higher than the average export growth rate since the signing of the Association Agreement. The dynamics of the import is analogous to that of the export.



**Figure 3. Export and import growth rate of the Republic of Moldova**

Source: Elaborated by the author on the basis of data from the National Bureau of Statistics of the Republic of Moldova (<http://www.statistica.md>) [11].

The reorientation of the flow of goods on the European market has not yielded any immediate positive results, as domestic goods do not meet the requirements of this market. In order to improve the created situation, it is necessary to increase the competitiveness of Moldovan goods. In order to determine the gaps we will analyze the competitiveness of the commodity groups, and then we will analyze the competitiveness of the goods of a particular group.

The most utilize indicator in assessing competitiveness is the export index of revealed comparative advantage BRCA, elaborated by Bela Balassa. „It is defined as the ratio of exports of one product in country’s exports to its share in total world commodity exports” [1, pp. 9]. But we will use the following

formula (1) to minimize the impact of structural changes in the global market on the results of the calculations [2, pp. 137]:

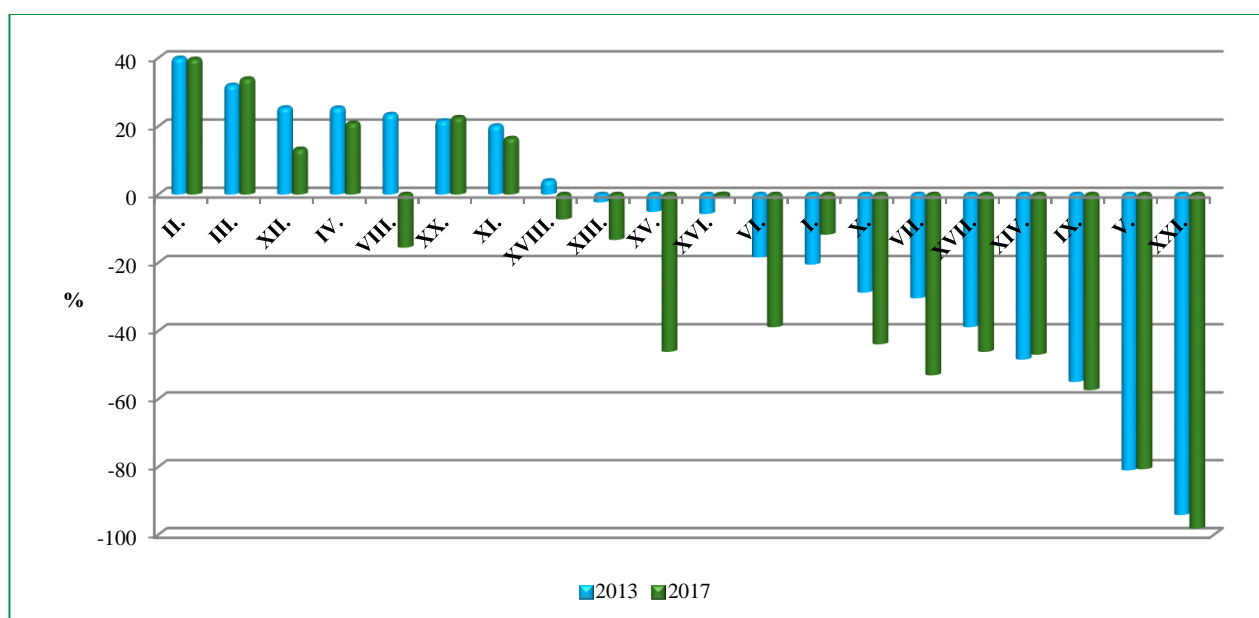
$$IACSE_i = \left[ \frac{(X_i)/(X_i + M_i)}{\sum_{i=1}^n (X_i)/\sum_{i=1}^n (X_i + M_i)} - 1 \right] \div \left[ \frac{(X_i)/(X_i + M_i)}{\sum_{i=1}^n (X_i)/\sum_{i=1}^n (X_i + M_i)} + 1 \right] \quad (1)$$

where:  $IACSE_i$  – the index of the symmetric comparative advantage of the section (group of goods)  $i$  on the foreign market;

$X_i$  – volume of export of the section (commodity group)  $i$ ;

$M_i$  – volume of import of the section (commodity group)  $i$ .

Figure 4 shows the main commodity sections ordered according to the symmetric comparative advantage. During the period 2013-2017, the number of section with advantage decreased from eight to six (out of 21). Therefore, in the last year, the most commodity groups have a disadvantage.



**Figure 4. The index of the symmetric comparative advantage by sections according nomenclature of goods, Republic of Moldova**

Source: Authors' calculations using UN Comtrade data (<https://comtrade.un.org>) [12].

In 2017, section II „Vegetable products” had the highest comparative advantage, followed by the sections: III „Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes”, XX „Miscellaneous manufactured articles”, IV „Prepared foodstuffs; beverages, spirits and vinegar; tobacco and manufactured tobacco substitutes”, and the biggest comparative disadvantages had the sections: XXI „Works of art, collectors' pieces and antiques”, V „Mineral products”, IX „Wood and articles of wood; wood charcoal; cork and articles of cork; manufactures of straw, of esparto or of other plaiting materials; basketware and wickerwork”.

Section XII „Footwear, headgear, umbrellas, walking sticks, riding-crops and parts thereof; prepared feathers and articles made therewith; artificial flowers; articles of human hair” drop from 3rd place to 6th place during the analyzed period; its advantage decrease from 25.35% to 13.24% due to the loss of shoe sales markets and the increase of imports by 29.5% in 2017 versus 2013.

Although section XI „Textiles and textile articles” up from 7th place to 5th; it still achieved a lower advantage in 2017 compared to 2013; and sections VIII „Raw hides and skins, leather, furskins and articles thereof; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silkworm gut)” and XVIII „Optical, photographic, cinematographic, measuring, checking, precision,

medical or surgical instruments and apparatus; musical instruments; parts and accessories thereof” passed from zone with advantages to zone with comparative disadvantages.

In order to identify the causes of the decrease of the competitiveness of some goods, it is need to analyze this indicator in correlation with two factors: price and quality. The author has developed two new approaches to evaluate comparative advantages.

### A new approach to assessing the price competitiveness of goods

Export is the demand of the external sector for the domestic good and can be represented as a function dependent on two factors: the export price and the price for the substitute good (import price):

$$ex\_good = c + a \times good\_p\_x + b \times good\_p\_m \quad (2)$$

where:  $ex\_good$  – the export volume of the good;

$good\_p\_x$  – the export price;

$good\_p\_m$  – the import price.

The author proposes the following formula to calculate the relative competitive advantage by price ( $RCAP$ ):

$$RCAP_i = \frac{a_i}{b_i} \quad (3)$$

where:  $a_i$  – the export price regression coefficient (the mean change in export of good  $i$  for one unit of change in the export price);  $b_i$  – the import price regression coefficient (the mean change in export of good  $i$  for one unit of change in the import price).

A country detects relative competitive advantage by price in merchandise for which this indicator by modulus is higher than 1. The author applied this methodology for a set of goods and presented the results of the estimation of the regression equations in Table 1, and the relative competitive advantage by price in the division of goods in Figure 5.

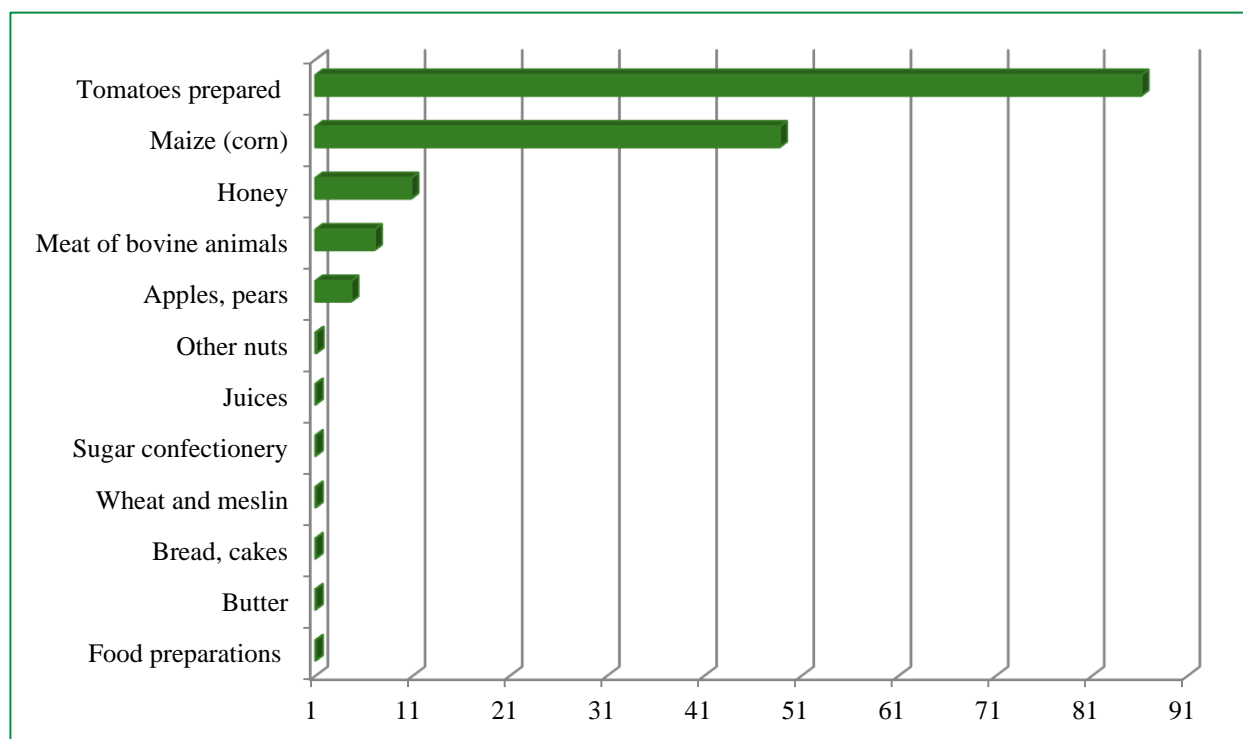
Table 1

### Exports of some goods for January – July of 2014 and 2018

Code	Goods	The regression equation	R-squared
0202	Meat of bovine animals, frozen	$ex\_meat = 6.804 - 1.927 \times meat\_p\_x + 0.272 \times meat\_p\_m$	0.985
0405	Butter and other fats and oils derived from milk	$ex\_butter = 3.8 + 0.319 \times butter\_p\_x - 1.078 \times butter\_p\_m$	0.782
0409	Natural honey	$ex\_honey = 12.88 - 2.828 \times honey\_p\_x - 0.261 \times honey\_p\_m$	0.764
0802	Other nuts, fresh or dried, whether or not shelled or peeled	$ex\_nuts = 19.32 - 1.07 \times nuts\_p\_x + 0.978 \times nuts\_p\_m$	0.809
0808	Apples, pears and quinces, fresh	$ex\_apple = 0.37 - 3.034 \times apple\_p\_x + 0.65 \times apple\_p\_m$	0.911
1001	Wheat and meslin	$ex\_wheat = 2.71 + 1.676 \times wheat\_p\_x - 4.512 \times wheat\_p\_m$	0.985
1005	Maize (corn)	$ex\_corn = 1.05 - 7.217 \times corn\_p\_x + 0.148 \times corn\_p\_m$	0.971
1704	Sugar confectionery	$ex\_conf = -1.6 - 1.102 \times conf\_p\_x + 2.626 \times conf\_p\_m$	0.870
1905	Bread, pastry, cakes, biscuits and other bakers' wares	$ex\_cake = 8.99 + 0.399 \times cake\_p\_x + 1.137 \times cake\_p\_m$	0.991
2002	Tomatoes prepared or preserved	$ex\_tomat = 10.3 - 12.321 \times tomat\_p\_x + 0.143 \times tomat\_p\_m$	0.786
2009	Fruit juices and vegetable juices	$ex\_juice = 27.9 + 5.6 \times juice\_p\_x + 7.0 \times juice\_p\_m$	0.745
2106	Food preparations not elsewhere specified	$ex\_food = 1.64 - 0.025 \times food\_p\_x - 0.257 \times food\_p\_m$	0.911

Source: Authors' calculations.

From the set of goods analyzed, there are only a few goods which have reached competitiveness by price, such as, for example, maize (corn), natural honey, apples, pears and quinces, fresh. Consequently, price-competitive goods are primary product, but not the goods of the manufacturing industry.



**Figure 5. The relative competitive advantage by price for some goods, Republic of Moldova**

Source: Authors' calculations using own methodology.

Wheat and meslin have a competitive disadvantage by price because the market for these goods is monopolized. Farmers with small households have to sell their production to other firms that specialize in exporting grain. They sell their production at a price that is about ½ of the export price. As a result, farmers hardly reimburse their expenses, and exporters get overpriced. This situation caused the wheat and meslin to have a relative competitive disadvantage by price.

#### **A new approach to assessing the competitiveness of goods by quality**

The functions of export and import of analogue goods differ by the coefficient of price elasticity. This difference lies at the basis of the elaboration of the relative competitive advantage by quality. The consumer when deciding to buy the domestic or imported goods is guided by the quality/price criterion. Suppose both import and export prices increased by 1%, as a result export volume increased by 4% and import by 2%. Therefore, the exported goods are relatively more competitive than the imported one.

Summarizing the above, the author suggests the following formula to calculate the relative competitive advantage by quality ( $RCAQ$ ):

$$RCAQ = \frac{\Delta X \%}{\Delta P_x \%} \div \frac{\Delta M \%}{\Delta P_m \%} \quad (4)$$

where:  $X$  – the export volume of the good;

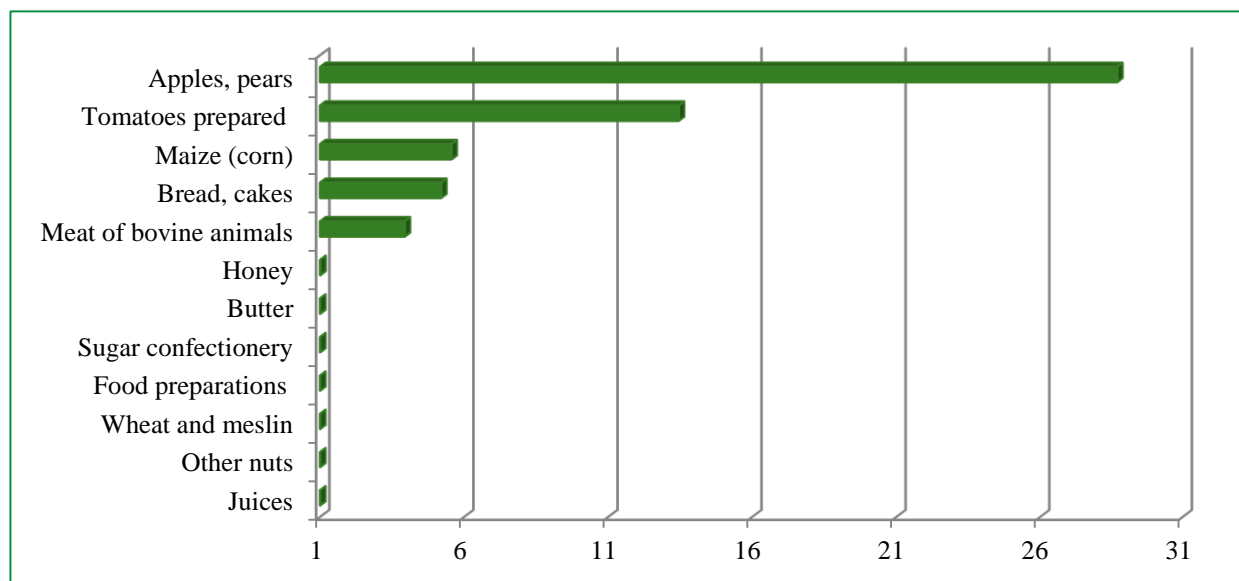
$M$  – the import volume of the good;

$P_x$  – the export price;

$P_m$  – the import price.

A country reveals relative competitive advantage by quality in commodity for which this indicator by modulus is higher than 1. The author applied this methodology for some merchandise and presented the results of the calculation in Figure 6.





**Figure 6. The relative competitive advantage by quality for some goods, Republic of Moldova**

Source: Authors' calculations using own methodology.

Only four from the set of analyzed goods are competitive by price and by quality: apples, pears and quinces, fresh; maize (corn); meat of bovine animals; tomatoes prepared or preserved. The first three merchandises are primary products, but the last is agricultural-based manufacture. If a country's economy relies on the competitiveness of primary goods, but not goods with a high added value, it will lead to economic stagnation (Figure 6).

There is a summarize of the results of calculating competitiveness by price and by quality in table 2; and also we can find the technological sophistication of the product in this table.

**Table 2**

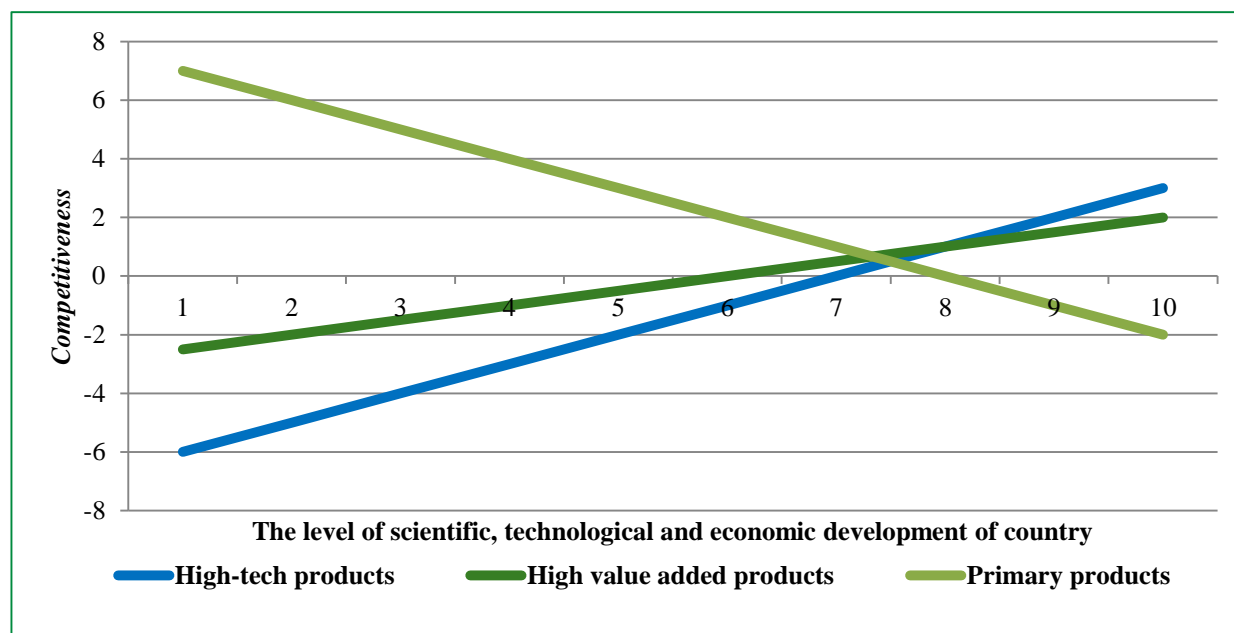
**The analysis of the competitiveness of some Moldovan agri-food goods by price, by quality and technological sophistication**

Code	Goods	RCA <sub>P</sub> advantage (+) / disadvantage (-)	RCA <sub>Q</sub> advantage (+) / disadvantage (-)	Technological Sophistication
0202	Meat of bovine animals, frozen	+	+	Primary products
0405	Butter and other fats and oils derived from milk	-	-	Primary products
0409	Natural honey	+	-	Primary products
0802	Other nuts, fresh or dried, whether or not shelled or peeled	+	-	Primary products
0808	Apples, pears and quinces, fresh	+	+	Primary products
1001	Wheat and meslin	-	-	Primary products
1005	Maize (corn)	+	+	Primary products
1704	Sugar confectionery	-	-	Agricultural-based manufactures
1905	Bread, pastry, cakes, biscuits and other bakers' wares	-	+	Agricultural-based manufactures
2002	Tomatoes prepared or preserved	+	+	Agricultural-based manufactures
2009	Fruit juices and vegetable juices	-	-	Agricultural-based manufactures
2106	Food preparations not elsewhere specified	-	-	Agricultural-based manufactures

Source: Elaborated by the author.



In the Republic of Moldova, the technological lag is growing and, accordingly, the competitive potential of many types of manufactured industrial products is falling. The processing industry is dominated by the processing of agricultural raw materials. The export and import analysis on the main types of production showed that the higher the degree of processing is, the lower competitiveness of Moldovan goods is, because Moldova does not possess new techniques and advanced technologies.



**Figure 7. The correlation between competitiveness and the level of scientific, technological and economic development of country**

Source: [9, pp. 13].

Our country needs to restructure industry for lead to high level of economic development and welfare. To achieve these goals, it is necessary to redirect all of its resources to the production of high value-added goods and high-tech products, since these products will ensure the achievement of a high level of competitiveness (Figure 7).

### Conclusions

Moldova should restructure its national economy, exports and imports, and when choosing the direction of specialization, it is necessary to use the principle of comparative advantages and take into account the structure of its production factors. The state needs to pay attention to the development of those branches of industry that have comparative advantages; it is necessary to redistribute production resources from branches that are considered disadvantaged, in branches with relative advantages.

The economic growth of highly developed countries is not based on extensive factors, but on intensive ones, on the introduction of progressive technology and the improvement of the quality of labour resources. Achieving a consistently high level of competitiveness of the national economy is also based on intensive factors.

On the basis of the researches we can conclude that it is necessary to develop production of the following goods: high-tech products, high value added products, as well as high-technology manufactures.

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