REPUBLIC OF AZERBAIJAN

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ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

EVALUATION OF COMPETITIVE DOMESTIC PRODUCTION AND ITS IMPACTS IN THE NON-OIL SECTOR

Speciality: 5302.01 **-** "Econometrics; economic statistics"

Field of science: Economics

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GENERAL DESCRIPTION OF THE DISSERTATION

Actuality and development of the topic. With globalization, the rapid development of information technologies, technological innovations approaching the center of socio-economic and cultural life, the size and forms of competition have changed Technological transformation leads to changes in national competitive strategies, and quality, lower costs and technological superiority become new competitive strategies. Factors such as closer cultural, political and socio-economic relations between countries, free movement of goods and services, investments and labor resources, the rapid development of international transport and communication links, and the growth of technological innovation have brought competitiveness to the fore. Azerbaijan, as part of the process of rapid transformation in the world in the context of globalization, must define a new competitive strategy and achieve sustainable economic growth. In connection with the above, the state has already taken practical measures, and as one of the results of this activity, the Presidential Decree of February 2, 2021 "Azerbaijan 2030: National priorities of socio-economic development" was adopted. The first and most important of the five National priorities to be achieved by 2030 is the achievement of a sustainable and growing competitive economy. For this, it is necessary to ensure sustainable and high economic growth, as well as to increase resilience to internal and external influences.

To achieve the above, one of the main challenges facing Azerbaijan is the development of the non-oil sector by reducing the economy's dependence on oil. Considering that in recent years have been signed dozens of state programs, concepts, orders and decrees aimed at the development of non-oil sector in Azerbaijan, the oil revenues are still the main source of financing the state budget, and crude oil is the main source of financing and a mainstay of foreign trade. All this makes it relevant to the development of non-oil sector and the production of competitive products based on new technologies.

In the context of new realities, there is a need for a comprehensive assessment of the economic effect from the creation of competitive industries in the non-oil sector through the effective use of the country's

economic and resource potential from the use of new technologies and innovations.

Therefore, it is important to identify competitive domestic products in the non-oil sector, to know the impact of an increase in their production and exports on the economy, and to determine the relevance of research.

Among the famous foreign scientists who have developed the theoretical and methodological foundations of competition as the main socio-economic phenomenon can be noted A. Simit, D. Ricardo, K. Marx, M. Weber, V. Zomart, M. Porter, I. Schumpeter, F. A. Hayek, P. Krugman and others. Competitiveness research has been approached from different angles, and a number of models for assessing competitiveness have been presented in the scientific literature analyzing the theory of competitiveness. In these literature (Porter 1990; Rugman and D'Cruz 1993, D'Aven1994; Weston, Chung et al 1990; Balassa 1965; Vollrath 1991) presents the various techniques used in competitive assay.

In general, can be noted the studies carried out at the Institute for Scientific Research on Economic Reforms to assess the economic impact, considering both competitiveness and inter-industry relations, and the studies of local scientists Y. Hasanli, M. Mehtiyev, A. Suleymanov and others.

Goals and tasks of the research. The aim of the study is to identify competitive commodity products for domestic production in the non-oil sector, analyze the factors affecting the change in their prices, and assess their economic impact, considering inter-industry relations.

To achieve this goal, the dissertation sets the following tasks:

1. Determination of methods for assessing the competitiveness of domestic production and the impact on competitive products;

2. Analysis of the current state of production, investment and productivity in the non-oil sector of the country;

3. Assessment of the competitiveness of Azerbaijan's non-oil export goods with coefficients of revealed comparative advantages;

4. Assessment of the potential comparative advantages of these products to determine the competitiveness of domestic production of products imported into Azerbaijan;

5. Identify the impact of price and non-price factors affecting the prices of competitive tradeable products;

6. Assessment of the impact of non-oil competitive industries on the country's economy, considering inter-industry relations.

The object of the research. The object of the research is domestic production in the non-oil sector of the Republic of Azerbaijan.

The subject of the research. Conditions and methods of ensuring the competitive advantage of commercial products in the competitive domestic production of the non-oil sector.

Methods of the research. Comparative and analytical analysis of the dissertation using official statistical data of the State Statistical Committee of the Republic of Azerbaijan (SSC), the State Customs Committee (SCC), the Central Bank (CB), reports of international organizations and official internet portals, as well as other sources, were used research methods such as econometric analysis, synthesis, analysis, graphical description, functional analysis.

The main provisions for the defence. The main provisions of the thesis are defined as follows:

- In the manufacturing, which are the main production fields of the non-oil sector, domestic investments in fixed assets are disproportionately distributed, and foreign investments are very small, which is one of the factors that negatively affect the production of competitive products;

The country's non-oil exports are mainly agricultural products. The products of the manufacturing, which dominate exports, are mainly exported in the form of raw materials or semi-finished products, which creates less added value within the country;

- In the period under review (January 2015 - December 2019), the main reason for the growth in retail prices for products with competitive domestic production was the exchange rate, average producer prices for products, raw materials and import prices.

- An increase in the production of competitive products leads to a decrease in the final product. This means that the increase in production in any industry is not due to domestic products, but due to imported products;

- Achieving competitive production in the non-oil sector is possible not only through the use of technological innovations in these areas or direct support for the development of these areas, but also through the development of secondary industries.

Scientific innovations of the research. The scientific novelty of the research is as follows:

- Index and methods of assessing competitiveness, as well as factors influencing them, are classified;

- The experience of resource-rich countries was studied and a classification of the separation of the oil and gas and non-oil and gas sectors was given on the example of Azerbaijan;

- Revealed comparative advantage of all non-oil products exported from the country (in 6-digit HS codes) for 2013-2019. Rated by both Ballassa and Lafay indices;

- Potential comparative advantages were assessed for over 200 products (in 10-digit HS codes) imported into the country in 2020 and which are the largest in value using the balanced price model based on the 2016 intersectoral balance sheets;

- An approach was proposed to assess the price and non-price factors affecting the level of prices for products, while price changes for some products that were identified as competitive were assessed econometrically;

- In addition, simulations have been carried out using "Input-output" and SAM multipliers models in the areas of certain competitive products.

Theoretical and practical significance of the research. The theoretical significance of the study lies in the development of theoretical and methodological foundations for determining the competitiveness of domestic products in the country and assessing its economic impact. The results obtained in determining the competitiveness of non-oil products produced in the country, as well as in assessing the economic impact, considering inter-industry relations, allow making political decisions to support non-oil industries in the country, as well as solving practical issues related to competitiveness.

The results obtained during the development of individual paragraphs of the study were submitted to the Ministry of Economy of the Republic of Azerbaijan for consideration. In addition to the above, the theoretical and practical questions developed in the framework of the research and the results obtained can be used by university students, specialists and government agencies conducting research in this area.

Approbation and application. Separate paragraphs of the dissertation are based on the Order of the President of the Republic of Azerbaijan No. 497 dated September 19, 2018 "On additional measures to support competitive domestic production in the non-oil sector" and in order to ensure the implementation of paragraph 9 "Preparing a list of specific products that are produced locally on the basis of comparative advantage, and organizing production to ensure the promotion of commercially viable products", work was carried out in accordance with the approved work plan of the Institute for Scientific Research on Economic Reforms of the Ministry of Economy for 2017-2019, the scientific and practical results obtained were accepted by the Institute for use, and the relevant reports were submitted to the Ministry of Economy.

12 articles and 5 theses covering the content of the dissertation, including 3 articles and 1 thesis were published abroad.

The structure of the thesis. The thesis consists of an introduction, 3 chapters, a bibliography of 103 titles and an appendix. Chapter I consists of 44 pages - 79611 characters, Chapter II - 46 pages - 55832 characters, Chapter III - 27 pages - 42635 characters, 142 pages in total.

THE CONTENT OF THE DISSERTATION

Introduction

Chapter I. Theoretical and methodological foundations for determining the competitiveness of productions.

1.1. Theoretical and methodological approaches to the competitiveness of production

1.2. Methods for assessing the competitiveness of domestic production and the impact by competitive products

1.3. Classification of non-oil and gas production and services

Chapter II. Assessment of the competitiveness of domestic production in the non-oil sector.

2.1. Current state of domestic production

2.2. Selection of products based on the revealed comparative advantage in the non-oil sector

2.3. Assessment of potential competitiveness

Chapter III. Assessment of socio-economic impacts of domestically competitive products.

3.1. Assessing the economic impact of domestic production competitiveness

3.2. Assessment of the impact of price and non-price factors on the price level of competitive domestic production

Result
List of used literature
Appendixes

MAIN CONTENT OF THE RESEARCH

The introduction substantiates the relevance of the dissertation topic, notes the goals and objectives of the research, indicates scientific innovations, the theoretical and practical significance of the work and approbation.

Chapter I. Theoretical and methodological foundations for determining the competitiveness of productions. This chapter explains the concepts of competition and competitiveness, analyzes classical and modern approaches to them, shows the factors and methods for determining competitiveness. It was noted that there are differences in the interpretation of the category "competitiveness" and "competition", and this is due to the peculiarities of its economic nature. It should be noted that the competition is multi-level. In modern economics, the term "competitiveness" is used to refer to categories at different levels. Examples include the competitiveness of a product, organization, industry, region, or country. Filosofova and Bykov called the interaction of different levels of competitiveness the "competitiveness pyramid" and presented it as shown in Figure 1 below.

Referring to the "Pyramid of Competitiveness", as well as to the theoretical approaches of scientists who have conducted research in this area, we can say that competitiveness at the macroeconomic level determines the conditions for the competitiveness of the entire economic system, while its meso or sectoral level of competitiveness forms the prospects for development industries and enterprises, firms.

Figure 1. "Pyramid of Competitiveness"[1]

Porter's contributions to the competitiveness literature are great. Porter considered the competitive advantages and companies playing a role in the international arena, based on the technological changes that determine the elements of global competition, and combined the model into 4 main components. These components that determine a country's competitive advantage are: 1) factor conditions, 2) demand conditions, 3) nearest and supporting areas, and 4) company strategy, structure and competition. Two edge variables have been added that account for the interaction of these 4 factors. These are: 1) government policy and 2) opportunities and chances. It can be concluded that all these variables are an important component of the competitiveness of countries.

In the economic literature, Porter, Pitel, Heis and other researchers, studying competitiveness and the factors affecting it, note that competitive advantage and competitiveness are formed by these factors. Liucvaitine, Peleckis and others grouped these factors as follows:

Table 1. Factors of competitiveness

Factor groups	Factors
General factors	Geopolitical situation of the country
	Legislative system of the country
	Economic situation of the country
	Economic and social policy
	Demographic situation of the country

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[1] Философова Т.Г., Быков В.А. Конкуренция и конкурентоспособность: учебное пособие для вузов / под ред. Т.Г. Философовой. – М.: ЮНИТИ, - 2007. – 271 с.

	Natural and ecological situation of the country
Main features of market economy	Regional differences
	Production costs
	State financial support
	Market size and consumer solvency
	Tax system
Factors of production infrastructure	Forms of ownership
	Staff quality
	Economic potential of the enterprises
	Structure of industry and restructuring infrastructure
	Scientific research

At the modern stage of development of market relations, both qualitative and quantitative methods of assessing competition are available, and these methods are widely used in the analysis of competitiveness at different levels.

In the process of researching the topic, the method of revealed comparative advantage and the method of domestic resource cost were used, which is widely used in determining the competitive advantages of countries in terms of products and industries.

Assessment of economic impacts considering inter-industry relations is based on V. Leontiev's input-output model. The model is based on the concept of direct spheres of influence, the most important new concept being the multiplicative product matrix and the corresponding artificial economic landscape. It is a classic analysis of key sectors and a hierarchy of industry forward and backward linkages.

SAM multiplier models based on input-output tables and the national accounting system have also been used to assess economic impact in a broader context, considering inter-industry relationships.

Today's industry can be viewed as a complex organism made up of many closely related industries. To ensure a high level of management and planning, it is necessary to provide a scientifically based classification of the areas that form them. The classification of sectors is a systematic list that reflects the structure and degree of social division of labor.

Over the years, different national classifications of economic activities have been created in different countries and, accordingly, the classification of territories has been carried out. These classifications are widely used in the development and analysis of statistical data.

Currently, in those regions of the world where the economy is largely dependent on resources, especially in oil-rich countries, the fields of economic activity for managing economic processes are divided into resource and non-resource, depending on the country's wealth with this resource. More precisely, in oil-rich countries such a division is usually made between the oil and non-oil sectors. Examples of such countries are Saudi Arabia, Bahrain, Nigeria, as well as Azerbaijan and others. The main goal is to compare the added value in the field of oil production and refining, which is the leading sector of the economy, investments in this area, the growth rate of the sector, etc. with other spheres of economic activity and determine the contribution of the industry to economic development.
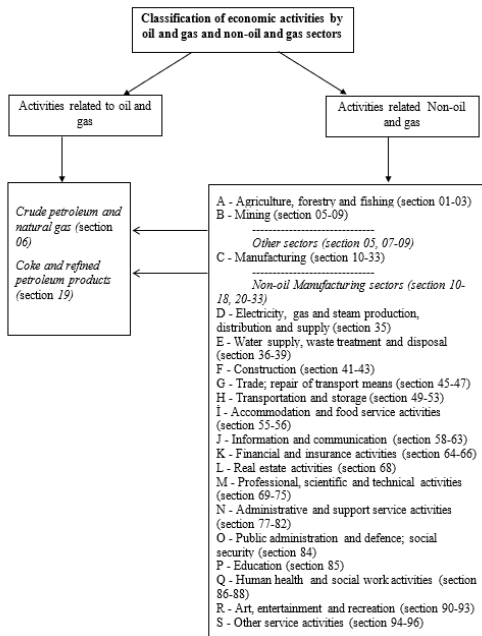
Figure 2. Distribution of non-oil and gas sectors.
Compiled by the author.

Since the assessment of the competitiveness of domestic production in the non-oil sector is the main goal of the dissertation, the classification of the non-oil sectors of the economy is especially important.

The following scheme we have prepared shows the distribution of the non-oil and gas sectors in accordance with the classification of

economic activities.

Chapter II. Assessment of the competitiveness of domestic production in the non-oil sector. To analyze the current state of competitiveness of domestic production in the non-oil sector, this section analyzes labor productivity, manufacturing and agriculture, which are the most important indicators of competitiveness, and evaluates investments in these areas. Analysis of the level of labor productivity by industry shows that the lowest level of productivity is in agriculture. Labor productivity in the manufacturing industry in 2019 was higher than in the previous 10 years and amounted to 31.2 thousand manats per person.

**Table 2. Labor productivity in Agriculture and Manufacturing, thsd. AZN / person**

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Agriculture	2.5	2.6	2.8	2.9	2.8	3.0	3.0	3.1	3.2	3.4
Manufacturing	27.5	29.2	29.6	28.8	29.7	30.2	28.6	27.7	28.6	31.2
of which:										
Food products	127.5	136.8	121.2	114.8	106.9	120.5	126.3	115.3	112.5	124.6
Beverage	32.7	29.9	32.3	37.6	40.0	34.3	32.4	35.1	38.2	53.9
Tobacco products	37.2	41.4	35.5	25.2	69.4	62.6	57.5	62.0	82.3	148.7
Textile industry	5.7	8.2	16.4	10.8	10.3	6.1	11.5	12.6	18.0	24.0
Wearing apparel	12.0	17.6	22.4	21.9	29.5	17.8	23.2	27.9	26.3	32.3
Leather, leather products and footwear	29.9	13.3	18.1	15.5	12.2	12.5	9.6	8.1	10.0	9.7
Wood and woodwork	7.6	8.2	5.7	4.4	12.0	26.7	58.3	85.7	103.2	188.8
Paper and paper products	19.2	91.1	18.9	13.5	11.5	12.3	14.9	13.8	11.9	14.9
Printing production	22.6	25.5	45.2	54.1	42.9	76.3	96.8	100.0	172.1	244.7
Refined petroleum	407.7	411.3	400.4	424.8	406.4	449.5	439.2	404.9	427.8	414.1
Chemical industry	13.8	19.1	15.8	19.1	28.4	42.6	39.1	26.8	39.0	49.0
Basic pharmaceutical	10.0	4.2	4.0	4.6	5.8	2.2	2.7	6.8	5.8	7.0
Rubber and plastics	10.8	12.2	18.2	16.6	9.1	8.0	9.0	15.5	17.1	20.8
Construction materials	49.2	64.4	63.8	62.1	62.7	67.1	70.0	92.8	123.2	129.3
Metallurgy industry	16.3	30.6	48.0	45.1	64.7	70.6	79.9	79.0	55.6	50.3
Fabricated metal products	29.4	28.9	36.9	34.0	26.7	42.2	58.3	36.6	38.3	69.0
Computer and other electronic equipment	24.8	33.3	57.0	41.7	30.0	70.6	66.8	78.6	76.6	116.3
Electrical equipment	41.7	39.1	66.8	16.5	17.9	21.2	93.9	119.9	268.0	270.9
Machinery and equipment	31.5	45.1	30.2	36.0	35.8	27.5	23.6	34.7	24.8	25.0
Motor vehicles and trailers	15.0	4.7	130.5	358.1	339.6	275.8	204.0	2.3	53.1	3644.7
Other transport equipment	2.4	3.1	46.3	99.3	328.9	139.6	46.5	62.3	22.1	15.9
Furniture	17.8	23.0	93.4	54.4	25.8	28.7	30.0	30.9	58.0	64.7
Jewelry, music, sports and medical equipment	12.1	13.7	84.5	82.4	166.9	274.2	192.6	97.2	150.5	129.2

Source: Compiled by the author on the basis of SSC data.

It should be noted that the "Employment Strategy of the Republic of Azerbaijan for 2019-2030" approved by the Order of the President of the Republic of Azerbaijan dated October 30, 2018, aims to increase productivity by focusing on high value added and labor-intensive areas, as well as to double labor productivity by 2030 (US $ 4.4 per person per hour in 2017).

Expansion of production in the manufacturing industry, increasing competitiveness makes it necessary to attract domestic and foreign investment in this area. However, the analysis shows that in 2019, 9.3 billion manat was invested in fixed assets in the industry as a whole. Of this, only 26.6% or 2.5 billion manat was directed to the manufacturing industry, of which 2.3 billion manat to the non-oil refining industry.

Within the framework of the study, localization coefficients were calculated to determine the competitiveness of the country's economic regions in the production of industrial and agricultural products. The production localization factor reflects the localization of specific industries in economic regions and the role of the relative sectoral structure and specialization of the economic region in the national economy.
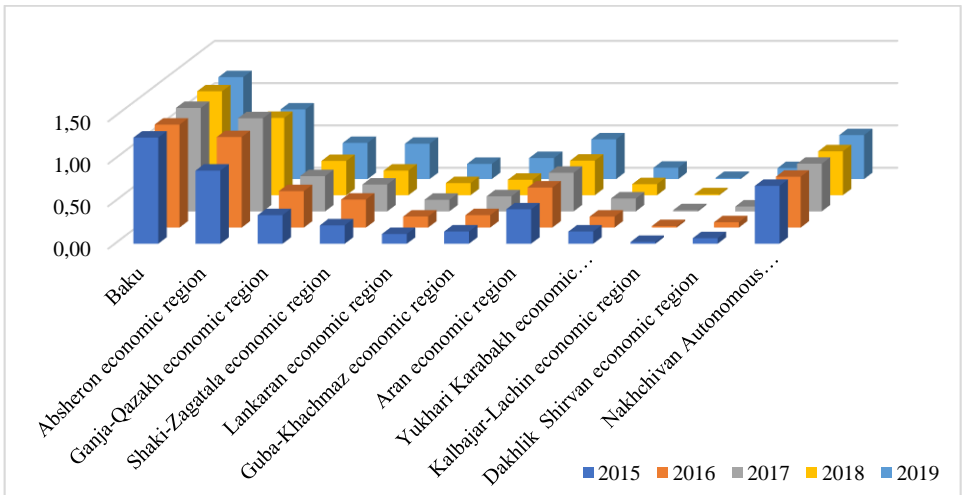
Graph 1. Coefficient of localization of industrial product by economic region

The level of localization in industry and agriculture varies depending on the geographic structure of economic regions and the work habits of the people living in them. Thus, while industry is concentrated mainly in large cities, in contrast to industry, the concentration of agricultural production is concentrated in the mountainous and foothill regions of the country. Graph 1 shows that the localization of industrial products is high in Baku and Absheron economic region. The largest coefficient of localization of agricultural production by economic regions is observed in the Kelbajar-Lachin, Yukharı-Karabakh, Lankaran, Guba-Khachmaz economic regions (Graph 2). In general, in both directions, the result is that in economic regions the coefficient of localization in industry increases, and in agriculture it decreases.
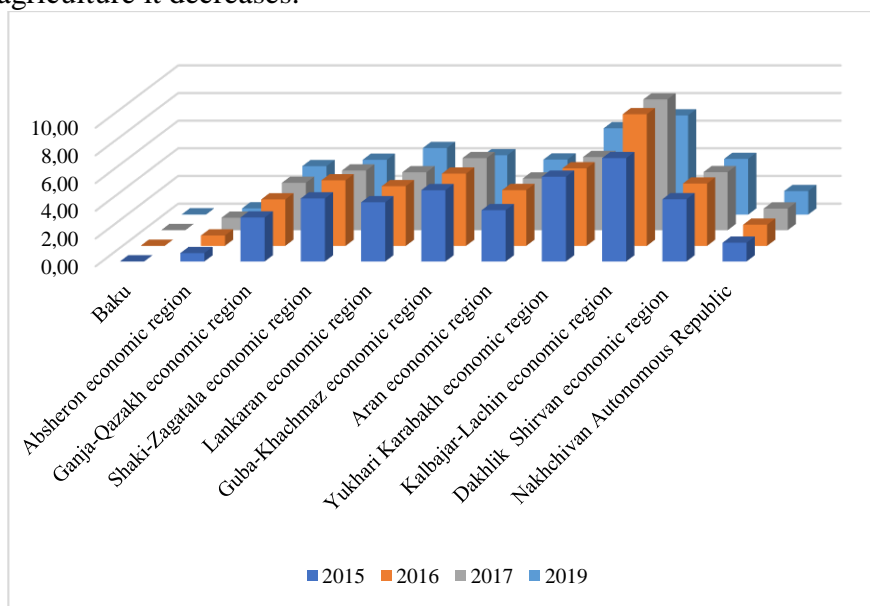
Graph 2. Coefficient of localization of agricultural product by economic region

Also, the Balassa and Lafay indices for 2013-2019 identified Azerbaijan's non-oil products that have comparative advantages and competitiveness in international markets.

The Balassa Index (BI) allows us to identify products that have a revealed comparative advantage in a country's exports.

As a result of efforts to determine comparative advantage after the Balassa index, 7 indexes were formed before Lafay. The Lafay index now provides a more dynamic measure in terms of comparative advantage.

In general, as a result of the assessment by the above methods, it was determined that the country's export of agricultural products and products of its processing has a greater comparative advantage than other manufactured goods.

In process of assessing potential competitiveness, products with a competitive advantage were determined by the method of domestic resource cost. However, another approach is that the Balassa index of revealed comparative advantage is calculated for products exported from the country, and DRC coefficients are determined for products imported into the country. To this end, 230 commodity subcategories (with 10-digit HS codes) were identified imported into the country in 2020 and have the largest share in value terms, and 203 commodity subcategories that may have production capabilities in the country, since the same important in terms of import offsets were selected. In the next step, the DRC method was applied to determine the competitive advantage over a commodity subcategory under 203 different codes selected for import. To note that there are a number of difficulties in calculating the DRC coefficient. Thus, it was impossible to calculate DRC in accordance with the methodology described in the first chapter, since it was almost impossible to obtain information on the cost of products, and at the same time, there were no inter-product balances for selected products, so an equilibrium price model based on the intersectoral balance was applied. The equilibrium price model is the best approach to finding the DRC ratio. The equilibrium price model allows us to solve the following problems:

$(I - A^T)^{-1}$ matrix and rates of added value of non-commercial products (V_{k+1}, V_{k+2}, ..., V_n) and prices of commercial products) ($P = (P_1, P_2,..., P_k k < n)$, rates of added value of commercial products ($V = (V_1, V_2,..., V_k k < n$ and prices of non-commercial products ($P_{k+1}, P_{k+k}, ..., P_n$) can be found. We assume that the global price

index for intermediate goods is known, the rates of value added are unknown, the rates of value added for non-tradable intermediates are known, and the shadow price index is unknown. Let's solve the problem in such conditions. Then the mathematical formula of the problem is schematically as follows (Figure 2):
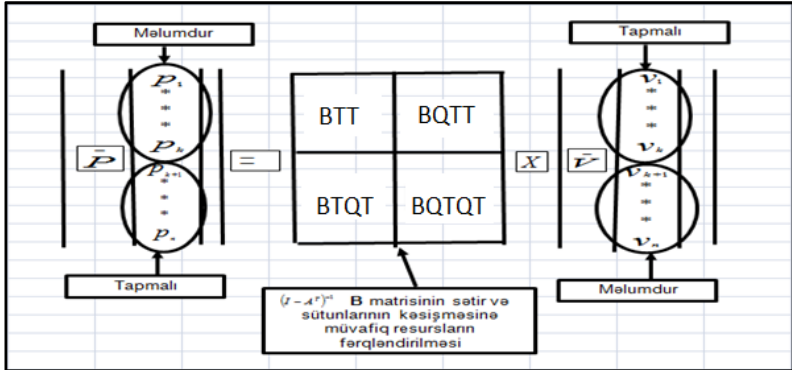
Figure 2. Schematic diagram of the equilibrium price model.[2]

Here, BTT is a $k * k$ - dimensional matrix that characterizes the total value of commercial products spent on commercial products,

BQTT is an $(n - k) * k$ matrix that characterizes the total value of commercial products spent on non-commercial products,

BTQT is a $(k) * (n - k)$ matrix that characterizes the total value of non-commercial products spent on commercial products,

BQTQT is an $(n - k) * (n - k)$ matrix that characterizes the total value of non-commercial products spent on non-commercial products.

The diagram below is a kind of description of the equilibrium price model.

$$\bar{p} = (I - A^T)^{-1}\bar{v} = B^T\bar{v} \tag{1}$$

Here, $(I - A^T)^{-1} = B^T$ - is the matrix of the total cost of the transponder. The solution to the problem is reduced to solving the following system of equations:

$$\begin{aligned} B_{tt} \cdot V_t + B_{qtt} \cdot V_{qt} &= P_t \\ B_{tqt} \cdot V_t + B_{qtqt} \cdot V_{qt} &= P_{qt} \end{aligned} \tag{2}$$

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[2] Mehdiyev M.M. Developing a model of estimation of competitiveness of products of agroindustrial complex:/ PhD on economics dis./Baku, 2014, - 190 p.

From the first equation, V_t is found as follows:

$$B_{tt} \cdot V_t = P_t - B_{qtt} \cdot V_{qt} \qquad (3)$$

$$V_t = B_{tt}^{-1}(P_t - B_{qtt} \cdot V_{qt}) \qquad (4)$$

The found V_t value is replaced by the second equation and P_{qt} is found. That is, if V_t - is in the second equation

$$P_{qt} = B_{tqt} \cdot B_{tt}^{-1}(P_t - B_{qtt} \cdot V_{qt}) + B_{qtqt} \cdot V_{qt} \qquad (5)$$

After determining the unknowns, the index of the change in domestic and world prices and the index of the change in value added (VAT) corresponding to these prices are found. If we find the ratio of the rate of value added to the difference between the world price index and the price index of commercial products and subtract this result from 1, we calculate the DRC coefficient. Since the equilibrium price model used to determine competitiveness is an integral part of the input-output model, shadow prices for non-commercial resources were found in terms of known world prices for commercial resources (i.e. shadow prices). This is fully in line with theory.

Chapter III. Assessment of socio-economic impacts of domestically competitive products. Using the capabilities of the input-output and SAM multiplier models mentioned in the theoretical-methodological part of the research, the impact analysis on competitive products was conducted in this section. Impact analyzes were performed in the second chapter of the dissertation on potentially competitive products. Impact analyzes were conducted mainly in two directions. The first of these examined the effects on the final product by growth simulation 5%, 10%, and 15% in total output in the areas of economic activity to which the identified competitive products belong.

In the second direction, a partially different approach was taken. Thus, in the implementation of the analysis, intersectoral balance sheets of production and distribution of products, works and services compiled by SSC and System of national accounts data, import-export indicators of Azerbaijan provided by State Custom Committee, "Classification of types of products (2009 edition) switches between the harmonized system of the foreign economic activity product nomenclature" and other data were used. Based on the general multiplier model of SAM

developed at the Institute of Scientific Research on Economic Reforms, a 10% growth was simulated to see the economic impact of the export of certain competitive products. It should be noted once again that the competitive products (potential comparative advantage) identified in the second chapter were selected from the products imported into the country in 2020 and the largest in terms of value.

Table 3. Simulation results of 5%, 10%, and 20% of the total output of the sectors to which the products belong

Sectors name	Row code	Final product before changing	Final product, 5%	Final product, 10%	Final product, 20%
Products of agriculture, hunting and related services	01.00	4779339	5019871.9	5260404.8	5741470.5
Other mining and quarrying products	08.00	2242975	-39919.9	-38122.6	-34527.9
Food products	10.00	-109727	2362470.8	2481967.1	2720959.6
Beverages	11.00	-41717.2	202664.4	213138.4	234086.5
Tobacco products	12.00	192190.4	23655.4	25158.1	28163.4
Textiles	13.00	22152.77	64007.6	67972.2	75901.4
Leather and related products	15.00	60042.99	-988.7	-567.9	273.8
Wood and of products of wood and cork, except furniture; articles of straw and plaiting materials	16.00	-1409.58	-78699.3	-77967.1	-76502.7
Paper and paper products	17.00	-79431.5	-52660.0	-51884.6	-50333.7
Chemicals and chemical products	20.00	-53435.4	-69909.6	-66335.8	-59188.4
Rubber and plastics products	22.00	-73483.3	-136230.3	-132667.3	-125541.3
Basic cast iron, steel and ferroalloys	24.10	-139793	-348924.9	-341162.5	-325637.6
Steel rods, pipes, hollow profiles and similar fittings	24.20	-356687	-472825.4	-475912.4	-482086.2
Other prefabricated steel products	24.30	-469739	-30305.6	-30599.0	-31185.6
Precious metals and other non-ferrous metals	24.40	-30012.3	116372.9	122316.0	134202.1
Metal casting services	24.50	110429.9	-3095.7	-3009.2	-2836.1
Fabricated metal products, except machinery and equipment	25.00	-3182.27	-71038.4	-66183.3	-56473.1
Computer, electronic and optical products	26.00	-75893.5	-159071.3	-155963.1	-149746.7
Electrical equipment	27.00	-162180	-252443.6	-251921.5	-250877.3
Machinery and equipment not elsewhere classified	28.00	-252966	-294523.6	-283025.3	-260028.8
Motor vehicles, trailers and semi-trailers	29.00	-306022	-111134.2	-112541.4	-115355.7
Furniture	31.00	-22542.2	-20497.9	-18453.7	-14365.2
Total		**5228909.1**	**5646774.5**	**6064640.0**	**6900370.9**

Source: Compiled by the author based on the simulation results

As noted, the fact that the final product is negative in many fields indicates that the aggregate demand for the product in those fields is met through imports. The results of the simulations show that when the total output of the fields is increased by 5%, the final product of fields 8th, 12th, 15th, 16th, 20th, 22nd, 24.1st, 24.2nd, 24.5th, 25th, and 26 - 28 is further reduced This means that there are not enough or insufficient resources for the production of these products in the country, and the lack of resources is imported In the remaining areas, the final product increases, which means that aggregate demand is met through domestic production. As a result of the simulations, the final output of the growth-shocked areas increases by 7.9% in the 5% scenario, and by 0.4% in the country's economy as a whole. Because it is a linear model, increases occur in the 10% and 20% scenarios, respectively.

Table 4. Results of 10% simulation of exports of relevant fields

Secors of economic activities	Value added	Total output	Taxes on product	GDP	Household cons.	Import	Supply to the domestic market	Aggregate demand
Agriculture	0,037	0,038	0,042	0,017	0,023	0,042	0,038	0,039
Mining	0,009	0,009	0,114	0,000	0,000	0,114	0,009	0,009
Manufacturing	-0,39	0,034	0,044	0,890	0,023	0,044	0,034	0,127
Electricity, gas and steam production, distribution and supply	0,042	0,042	0,046	0,020	0,023	0,046	0,042	0,043
Water supply, waste treatment and disposal	0,035	0,035	0,035	0,023	0,023	0,000	0,035	0,035
Construction	0,004	0,004	0,004	0,001	0,023	0,004	0,004	0,004
Trade; repair of transport means	0,036	0,036	0,037	0,022	0,023	0,000	0,036	0,036
Transportation and storage	0,030	0,030	0,047	-0,009	0,023	0,047	0,030	0,035
Accommodation and food service activities	0,012	0,012	0,023	0,011	0,023	0,023	0,012	0,016
Information and communication	0,022	0,022	0,023	0,022	0,023	0,023	0,022	0,023
Financial and insurance activities	0,043	0,043	0,043	0,020	0,023	0,043	0,043	0,043
Real estate activities	0,028	0,028	0,028	0,016	0,023	0,000	0,028	0,028
Professional, scientific and technical activities	0,014	0,014	0,020	0,026	0,023	0,020	0,014	0,018
Administrative and support service activities	0,026	0,026	0,033	-0,002	0,023	0,033	0,026	0,028

Public administration and defence; social security	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,000
Education	0,004	0,004	0,004	0,004	0,023	0,000	0,004	0,004
Human health and social work activities	0,008	0,008	0,008	0,007	0,023	0,000	0,008	0,008
Art, entertainment and recreation	0,017	0,017	0,017	0,017	0,023	0,000	0,017	0,017
Other service activities	0,023	0,023	0,023	0,023	0,023	0,000	0,023	0,023
Total	**-0,002**	**0,017**	**0,028**	**0,024**	**0,023**	**0,038**	**0,017**	**0,036**

Source: Compiled by the author based on the simulation results

As can be seen from Table 4, the projected 10% increase in exports of the economic activities to which the identified competitive products belong (mainly agriculture and processing industry) had a significant macroeconomic effect on the sectors to which they belong and on the entire economy. The largest impact was observed on imports (0.038%) and aggregate demand (0.036%). The growth rates of other indicators were 0.028% in product taxes and 0.024% in GDP. There is a 0.002% decrease in value added. Despite the increase in value added in other areas, a decrease of -0.392% only in the manufacturing industry ultimately led to a decrease in total value added.

Here, the effects of price and non-price factors on various indicators of price changes for some food and non-food products, identified as a result of Balassa and DRC methods of competitiveness assessment, were econometrically assessed and their contributions to price changes of these products were revealed. As mentioned, 8 out of 10 selected products (potatoes, pasta, butter, sunflower oil, black and green tea, chocolate candies with different fillings, hazelnuts, filter cigarettes) are food and tobacco products, and soap and cement are non-food products. The econometric valuation model database is formed on the basis of official SSCRA data on a monthly basis, covering the period from January 2015 to December 2019. The data used was obtained from the following sources, and some data were adapted based on official data.

Estimates include the retail price index as a variable, and the average producer price of a product, import price, export price, raw material price, water, gas and electricity price index, and household consumption expenditure as explanatory variables. To ensure adequate

estimation results, all time series were brought to a base year based on January 2015.

Estimates based on standardized series give results in two directions:

(i) Factors that have been found on the basis of valuation models indicate an increase in the goods price index, explained by a single percentage increase of these factors on the percentage point;

(ii) Finding the contribution of factors in the change of the price index of the explained products.

Based on the standard deviation of the series and the established of an econometric model, the contribution of explanatory variables to the increase in the retail price index has been found.

In the first case, the results were as in Table 5.

Table 5. Contributions of explanatory variables in price indices of competitive products in January-December 2019 compared to the corresponding period of 2015

№	Product name	Of which the share of factors, coefficients					
		Exchange rate	communal expenditure	import price	export price	producer price	Raw material
1	Potato	0.68	0.00	-0.12	-0.02	0.46	
2	Butter	0.13	0.17	0.40			0.29
3	Sunflower oil			0.74		0.19	0.07
4	Pasta	0.00	0.33	0.19			0.48
5	Black and green tea	0.54		-0.08		0.55	
6	Candy	0.48		0.17		0.35	
7	Hazelnuts	0.38			-0.10	0.72	
8	Filtered cigarettes	0.75	0.00	0.35		-0.09	
9	Soap	0.95		-0.16		0.20	0.01
10	Cement	0.15	0.49			0.35	

Source: Compiled by the author based on the model results.

In the second case, the results are shown in Table 6.

During the comparison periods between the selected products, the prices of butter, tea, cigarettes and detergents more increased. Based on price increases, the effects of exchange rates, production and import prices appear to be greater.

Table 6. Proportion of factors influencing the change in the price indices of selected competitive products in January-December 2019 compared to the corresponding period of 2015

№	Product name	The difference between periods in price indices, %	Of which the share of factors, %					
			Exch ange rate	kommu nal expend.	import price	export price	produ cer price	Raw materi al
1	Potato	**5.03**	3.45		-0.61	-0.12	2.32	
2	Butter	**89.54**	12.04	15.0	36.25		0.00	26.25
3	Sunflower oil	**29.99**			22.29		5.74	1.96
4	Pasta	**30.11**		10.0	5.69		0.00	14.42
5	Tea	**81.74**	43.80		-6.94		44.88	
6	Candy	**40.31**	19.34	0.02	6.96		13.99	
7	Hazelnuts	**44.25**	16.70			-4.36	31.91	
8	Cigarettes	**59.28**	44.23	-0.22	20.68		-5.41	
9	Soap	**58.99**	56.27		-9.37		11.73	0.35
10	Cement	**23.10**	3.52	11.43			8.15	

Source: Compiled by the author based on the model results.

Thus, the assessment of the consumer price factor, which is one of the key factors in the formation of product competitiveness, is presented as an approach. As noted earlier, the limited selection of products, mainly for food, was due to a lack of information. The inadequacy of the coefficients for some products is also due to the fact that it is not known exactly what the raw materials used in the production of the products are, as well as the fact that data about them is often not provided by SSC in open sources.

The main results of the dissertation.

1. The disproportionate distribution of domestic investment in the manufacturing, which is the main production areas of the non-oil sector, and the almost complete absence of foreign investment are the main factors that negatively affect low labor productivity and the production of competitive products in this area However, the existing raw materials and resource potential of Azerbaijan, including human resources, allows us to produce competitive products in the non-oil sector. The production of competitive products, in its turn, emphasizes the importance of increasing productivity and attracting investment in the industry. Increasing productivity also requires the use of new

technologies and modern approaches, such as cost-effective production methods, rather than traditional methods in the production process.

2. The assessment of a revealed comparative and potential comparative advantage allows us to say the following about domestic production in the non-oil sector:

• Non-oil exports of Azerbaijan mainly consist of agricultural products;

• The products of the manufacturing that predominate in exports, being mainly food products, are imported in the form of semi-finished products and are processed. And this means creating less added value inside;

• There are also 71 products with a potential comparative advantage, mainly in agriculture, food, beverage, tobacco products, as well as in the chemical industry, furniture production and other fields product. But these products also cause a large influx of currency from the country. Effective use of existing production capacity and support for the industries to which these products belong can be significant.

3. The influence of price and non-price factors that cause changes in retail prices for several competitive goods was econometrically evaluated, and it was found that the main reason for the increase in prices for these goods is the change in the exchange rate, import and production prices for raw materials.

4. Growth shocks of 5%, 10% and 20% of the total output of sectors of economic activity, which include competitive products, and the impact on both these industries and the economy as a whole were tested. As a result of the simulation, it became clear that the growth shock caused by these areas further reduces the final product in many of these areas. According to the results of simulations, the final product of the simulated industries in the 5% scenario increases by 7.9%, and in the country's economy as a whole-by 0.4%.

5. A 10% shock to the growth of exports of economic activities, which include competitive identified products, led to a decrease in value added in the manufacturing industry by about 0.4%, while imports as a whole increased by 0.038%. The decline in value added means that the production that needs to be achieved in order to increase

exports is not possible with the help of domestic resources. At this time, the resource necessary for the implementation of production is imported, which leads to the fact that imports, which are a component of added value, significantly exceed exports. This, in turn, leads to a decrease in added value in the industry.

Summarizing the above results, we can conclude that in order to achieve competitive production in the non-oil sector in the country as noted in Porter's "national rumbo", the development of industries that support industries that produce competitive products must be achieved. This means that the production of competitive products will cost at the expense of raw materials obtained through domestic production. This, in turn, will lead to the diversification of production sectors, which is a priority element of the state's economic policy.

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