REPUBLIC OF AZERBAIJAN

On the right of the manuscript

ABSTRACT

of the dissertation for the degree of Doctor of Philosophy

PRICE MECHANISM FOR MAINTAINING COMPETITIVENESS IN FOOD INDUSTRY ENTREPRISES AND DIRECTIONS FOR IMPROVING IT

Specialty: 5311.01- Organization and management

of the enterprise

Field of science: 53 – Economic sciences

Applicant: Safarova Fidan Mahish qizi

The dissertation work has been carried out at the Department of "Social Development Economics and Evaluation" of Azerbaijan State University of Economics.

Scientific supervisor: Professor, Doctor of Economic sciences

Khanhuseyn Huseynagha oghlu Kazimli

Official opponents: Professor, Doctor of Economic sciences

Islam Haji oghlu Ibrahimov

Professor, Doctor of Economic sciences Gazanfar Salman oghlu Suleymanov

Doctor of philosophy in economics Namig Alovsat oghlu Shalbuzov

Dissertation council FD 2.22 of Supreme Attestation Commission under the President of the Republic of Azerbaijan operating at Azerbaijan State Oil and Industry University.

Chairman of the Dissertation council:

Kilmano(Signature Corresponding member of ANAS Doctor of economic sciences, Professor Gorkhmaz Jahangir oghlu Imanov

Scientific secretary of the Dissertation council



Doctor of philosophy in economics assistant professor

Ilham Samil oghlu Rustamov

Chairman of the scientific seminar:

Doctor of economic sciences, Professor Ganimat Asad oghlu Safarov



WORK CHARACTERISTICS IN GENERAL

Relevance and level of development of the topic: One of the most significant components of the country's economic policy is the study and appraisal of the impact of price determinants on the country's food production industry. The establishment of an efficient sales policy that directly helps to expand output in accordance with the requirements of domestic and foreign markets by increasing product competitiveness are the primary parameters determining the level of development of food industry companies.

In the "Azerbaijan 2030: National Priorities for Socio-Economic Development," approved by the President of the Republic of Azerbaijan on February 2, 2021, one of the National Priorities for the country's socio-economic development over the next decade is the establishment of a steadily growing competitive economy. Sustainable and high economic growth, as well as resistance to internal and external shocks, is important for the effective fulfilment of this objective, since healthy and balanced economic growth offers a firm foundation for the country's long-term development. The non-oil industry must become a mainstay of development, despite the fact that the oil and gas sector is one of the main drivers of socio-economic development in terms of achieving sustainable economic growth, deep diversification of the national economy, and full use of export potential for goods and services. If the economy is to be sustained, the non-oil sector's portion of the economy must rise through a diverse and competitive economy.

As stated in the National Priorities for Socio-Economic Development by 2030, maintaining price stability as a crucial condition for macroeconomic stability will boost expectations and investment in the country's economy.

It is no secret that price is the most important factor in determining the competition. Price operates as a mechanism for controlling economic processes when there is beneficial competition: it balances supply and demand between producers and consumers by tying them to their ability to pay. Furthermore, in a more competitive market, price has a direct

_

¹ "Azərbaycan 2030: sosial-iqtisadi inkişafa dair Milli Prioritetlər" Azərbaycan Respublikası Prezidentinin 2021-ci il 2 fevral tarixli Sərəncamı ilə təsdiq edilmişdir.

stimulant effect, since its level encourages the employment of more costeffective manufacturing methods and a more comprehensive use of available resources.

In the current situation, when the country's inflation raises the transfer of cost components to prices, the price of imported goods rises leading to higher levels of inflation, an order from the Cabinet of Ministers of the Republic of Azerbaijan "on urgent measures to strengthen anti-inflationary measures in the Republic of Azerbaijan" dated February 21, 2022 states that maintaining macroeconomic stability requires reducing price pressure on food prices in the domestic consumer market and maintaining the ratio between real incomes and purchasing power of the population. The Azerbaijani government plans to moderate price-increasing variables in order to avoid the country's prices from continuing high in 2022, as well as take immediate steps to encourage domestic production of basic daily requirements².

The government has planned a number of measures to reduce the impact of inflation on commercial activity and social welfare in Azerbaijan, based on the setting of prices in accordance with market principles, according to the eighth paragraph of Article 119 of the Constitution. Priority has been given to creating a healthy competitive environment in Azerbaijan as one of these steps in order to tighten control over price manipulation in the home market. This involves monopoly avoidance, market divisions, the application of agreed-upon pricing, and price manipulation³.

On the basis of food industry firms, the paper analyzes and develops the current condition of competitiveness of the Azerbaijani economy. The work's urgency is defined by the fact that developing proposals for strengthening the price mechanism to ensure the economy's competitiveness contributes to economic growth that fulfils the needs of the state's socio-economic development. Increasing competitiveness is a problem that almost every organization faces at some point.

-

² "Azərbaycan Respublikasında antiinflyasiya tədbirlərinin gücləndirilməsi ilə bağlı təxirəsalınmaz tədbirlər haqqında" AR Nazirlər Kabinetinin Sərəncamı.Bakı ş. 21 fevral, 2022-ci il.

³ "Azərbaycan Respublikasında antiinflyasiya tədbirlərinin gücləndirilməsi ilə bağlı təxirəsalınmaz tədbirlər haqqında" AR Nazirlər Kabinetinin Sərəncamı.Baka ş. 21 fevral, 2022-ci il.

The price mechanism to ensure competitiveness is poorly explored in the practice of regulating the country's industry, including food industry firms. This is owing to the "seller's market" stage's retention of corporate traditions. This technique, on the other hand, does not satisfy the needs of the present stage of market development. In the practice of entrepreneurship and management, determining the competitiveness of economic entities and their goods is critical.

Numerous research papers have been written to look at the issues of boosting the economy's competitiveness. Scientists from Azerbaijan and other countries have made significant contributions to the development of price and competitiveness theory.

Adam Smith established one of the first concepts of perfect competition in his book titled "the Nature and Causes of the Wealth of Nations" (1776). Smith connected competition with the "invisible hand" of the market, the automatic balance mechanism, and devised a price competition mechanism, claiming that special interests and economic efficiency should balance competition⁴.

D. Ricardo developed a theoretical model of perfect competition, which he improved in his book titled "Principles of Political Economy" (1817) with the theory of comparative advantage⁵.

Prominent scholar Michael Porter researched about competitiveness of goods (works and services) produced by different enterprises (firms and companies) in his work titled "The Competitive Advantage: Creating and Sustaining Superior Performance" ⁶, investigated factors of international competitiveness of any country (factors of production, investment, innovation) in his work "International Competition" ⁷ and studied issues of assessing the competitiveness of the industry in his book titled "Competitive Strategy: Techniques for Analyzing Industries and Competitors" ⁸.

⁴Смит,А. Исследование о природе и причинах богатства народов. М.: ЭКСМО. –2009. –с. 956, - с.112.

⁵Enright, M.J. Why Clusters are theWay to Win the Game? // Word Link. — 1992. - №5. - Р. 24-25. ⁶Портер, М. Конкурентное преимущество: как достичь высокогорезультата и обеспечить его устойчивость. - М.: Эконом. наука, –2005. — 225 с.

⁷Портер, М. Международная конкуренция. М.Международные отношения. –1993.

⁸Портер, М. Конкурентная стратегия: методика анализа отраслей и конкурентов. Пер. с англ. М.Альпина. Бизнес букс. –2005, –454 с.

Different features of current enterprise competitiveness and pricing mechanisms, including agro-food and manufacturing industries have been researched by local scholars. These research works include the doctoral works of V.H. Abbasov titled "Economic problems of regulating inter-sectoral relations in the agro-industrial complex" 9 and R.Z. Huseynov titled "Problems of increasing the competitiveness of crop products in the Republic of Azerbaijan" as well as in the doctoral dissertations A.H. Aliyev titled "Problems of transformation of the food market in the Republic of Azerbaijan" ¹¹ and N. Kamalov titled "Directions for improving the organization of marketing in the food market in the Republic of Azerbaijan" 12. The topic has been also researched in the monographs of H.A. Khalilov titled "Growth rates of agricultural production in Azerbaijan: features of the dynamics and the role of resource factors"¹³, I.H. Ibrahimov "Prospects for the development of the integration of the agricultural and food industries in Azerbaijan"¹⁴, I. Aliyev and I. Soltanlı "Problems of modernization and competitiveness of the agrarian sector, 15.

In connection with ensuring food security in Azerbaijan, the monographs A.F. Abbasov «Food safety»¹⁶, B. Kh. Atashov "Current

.

⁹Abbasov, V.H. "Aqrar-sənaye kompleksində sahələrarası əlaqələrin tənzimlənməsinin iqtisadi problemləri" i.e.d. Alimlik dərəcəsi almaq üçün təqdim edilmiş dissertasiyanın avtoreferatı. –2012, – 29 s.

 $^{^{10}}$ Hüseyn, R.Z. Azərbaycan Respublikasında bitkiçilik məhsullarının rəqabətqabiliyyətliliyinin artırılması problemləri. i.e.d. alimlik dərəcəsi almaq üçün təqdim edilmiş dissertasiyanın avtoreferatı. $-2017, -34 \, \mathrm{s}.$

¹¹Əliyeva, A.H. Azərbaycan Respublikasında ərzaq bazarının transformasiya problemləri. İqtisad üzrə fəlsəfə doktoru elmi dərəcəsi almaq üçün təqdim edilmiş dissertasiya. – Bakı: – 2013, –154 s. ¹²Kamalov, N. "Azərbaycan Respublikasında yeyinti Məhulları Bazarında Marketinqin Təşkilinin Təkmilləşdirilməsi İstiqamətləri" İqtisad üzrə fəlsəfə doktoru elmi dərəcəsi almaq üçün təqdim edilmiş dissertasiya., –Bakü, –2011.

¹³Xəlilov H.A.Azərbaycanda aqrar istehsalın artım templəri: dinamikasının xüsusiyyətləri və resurs amillərinin rolu. "Kənd təsərrüfatının iqtisadiyyəti" elmi-praktik jurnalı, 2020 №1. https://agroeconomics.az/az/article/2/azerbaycanda-aqrar-istehsalin-artim-templeri-dinam/

¹⁴ İbrahimov İ.H.Azərbaycanda kənd təsərrüfatı iləyeyinti sənayesinininteqrasiyasının inkişaf perspektivləri. // Agricultural Economics * Kənd təsərrüfatının iqtisadiyyatı * Экономика сельского хозяйства - 2021, № 3 (37), s. 82-92.

¹⁵Alıyev, İ. Aqrar sahənin modernləşməsi və rəqabət qabiliyyətliliyinin təmin olunması problemləri /İ.Alıyev, İ.Soltanlı, —Bakı: "Avropa" nəşriyyatı, —2017, —428 s.

¹⁶ Abbasov, A.F. «Ərzaq təhlükəsizliyi», Bakı: –2007, –602 s.

issues of food security"¹⁷, E.A. Quliyev "Global food security: realities, challenges and prospects", "Reliable food supply system: problems of cooperation and integration" ¹⁸ can be highlighted. Also, E.Y. Mammadov's doctoral dissertation in economics titled "Problems of formation and development of the consumer goods market in modern conditions"¹⁹ can be stressed.

At the same time, there are a number of difficulties that need to be clarified and solved with this problem. Experience has revealed the need to strengthen the legislative, organizational, and methodological framework for analyzing and evaluating the efficacy of economic activities. The need to increase the efficiency of food industry enterprises in a modern market economy, the practical usefulness of such research, and the paucity of research on separate but significant aspects of competitiveness management technique and practice highlight the urgency of this subject.

Goal and objectives: The goal of this research is to investigate the difficulties with the price system in Azerbaijan's food sector, as well as to create theoretical and practical proposals for its reform.

In accordance with the purpose of the study, the following objectives have been identified:

- Investigate the theoretical underpinnings of the price mechanism's impact on ensuring competitiveness, including the economic nature of the functional relationship between competitiveness and the price mechanism, factors, criteria, and indicators of food production competitiveness, and to identify key market model features;
- Analyze and evaluate the current state of food production and food industry enterprises in Azerbaijan;
 - Investigate the impact of the customs-tariff factor on food sector

¹⁸Quliyev, E.A. Qlobal ərzaq təhlükəsizliyi: reallıqlar,çağırışlar və perspektivlər. –Bakı, –2018. "Kooperasiya" nəşriyyatı, –480 s.;Quliyev, E.A "Etibarlı ərzaq təminatı sistemi: kooperasiya və inteqrasiya problemləri". –Bakı, "Elm" nəşriyyatı, –2013, –308 s.

¹⁷Ataşov, B.X. "Ərzaq təhlükəsizliyinin aktual problemləri" / B.XAtaşov –Bakı: "Elm", –2011, –180 s.

¹⁹Məmmədov, E.Y. Müasir şəraitdə istehlak malları bazarının formalaşması və inkişafi problemləri. İqtisad elmləri doktoru alimlik dərəcəsi almaq üçün təqdim edilmiş dissertasiyanın avtoreferatı. – Bakı, –2014. –51s.

firms' overseas economic activities;

- Within the innovation market, to learn about the peculiarities of pricing model formation in the food business;
- Find techniques and legal mechanisms to boost the food industry's competitiveness;
- Prepare ideas for enhancing the pricing structure in the food business to maintain competitiveness;

The subject of the research is the organizational and economic relations that form the price mechanism to ensure the competitiveness of the food industry enterprises of the Republic of Azerbaijan. The object of research is the food industry of Azerbaijan.

The research's methodological foundation is the work of local and international economic scientists on the topic at hand. The empirical basis of the study was legislative and normative legislation governing the competitiveness and price mechanism of food production in Azerbaijan. It also includes works on price and competitiveness concerns by Azerbaijani and foreign specialists in the information base, scientific conference materials, publications, and compiles and summarizes financial statements obtained by the author himself.

Research methods: Economic-statistical, economic-mathematical, systematic, comparative, and logical, cause-and-effect and structural analysis methods, as well as the method of expert assessments have been used in solving the set objectives.

Scientific novelty of the research: By investigating theoretical and methodological concerns with competitiveness in food industry enterprises in the Republic of Azerbaijan suggestions have been determined to improve the use of the price mechanism in its provision.

The scientific innovations of the dissertation work include the followings:

- The functional relationship between competitiveness and the price mechanism in the food industry, the factors affecting their competitiveness, and the principles, conditions, and directions of formation of competitive advantages have been clarified theoretically and conceptually based on an in-depth analysis of classical and modern economic theories:
 - The current situation of Azerbaijan's food production and

enterprises has been studied and assessed, with successes acknowledged, problems discovered, and appropriate solutions devised to address them;

- The price system for ensuring the country's food industry's competitiveness in export-import operations has been determined and evaluated;
- The price mechanism's function in the establishment of innovative production was investigated and analyzed, as well as econometric modelling of the impact of some economic elements on food production.
- To increase the role of the price incentive function in guaranteeing the competitiveness of food industry firms, relevant proposals and recommendations have been produced;
- The goals for enhancing the price mechanism to ensure the food industry's competitiveness, as well as price regulation are defined and justified in several market models.

The main provisions of the defence: The author has received the following new provisions, findings, and recommendations:

- From a theoretical standpoint, the impact of the price mechanism on ensuring the competitiveness of food industry enterprises in the Republic of Azerbaijan and global food markets has been revealed;
- Food production trends in Azerbaijan, as well as elements affecting the competitiveness of food industry firms, such as the price system to assure food production competitiveness have been identified and appraised;
- The importance of customs and tariff policy in ensuring the competitiveness of the country's food industry companies' overseas economic activity is demonstrated;
- The method of price generation for food industry firms in Azerbaijan's market of innovative products was investigated and assessed;
- The relationship of food production on fixed assets and the number of employees was modelled using econometrics;
- Proposals have been created to improve state regulatory and legal frameworks for using the price mechanism to ensure and boost the competitiveness of Azerbaijan's food industry firms.

Theoretical and practical significance of the research: The research's practical value is shown in the formulation of ideas to improve

the efficiency of the food sector while taking into consideration the potential of partner countries in international trade. Suggestions and recommendations for ensuring competitiveness through the use of the price mechanism can be used to handle investment, marketing, reorganization, and bankruptcy of food production businesses. They may be of interest to government authorities responsible for the creation of a competitive economy, as well as foreign economic specialists and educators. The author's assessments and results can be used in the teaching process of the courses "Corporate Economics", "Enterprise Economics", "Organization of Production", "Innovation Economics".

Approbation of the main provisions of the dissertation: The dissertation work has been carried out at the "Price and Evaluation" department of the Azerbaijan State University of Economics. The main provisions and results have been presented in the following conferences International Conference dedicated to "The problem of including developing and increasing the efficiency of the national economy" (Baku, 2012), I International Scientific Conference of Young Researchers (Baku, 2013), 3rd International Scientific Conference of Young Researchers (Baku, 2015), XIX Republican Scientific Conference of Doctoral Students and Young Researchers (Baku, 2015), "5th International Conference on Lifelong Learning and Leadership for All" (Baku, Sakarya, 2019), I International Scientific-Practical Conference titled of Azerbaijan and Turkey: Education, "Universities Technology" (Baku, 2019), the 55th International Scientific Conference on Economic and Social Development (Baku, 2020). The results of the dissertation have been published in 8 scientific journals, 3 of which were abroad (Moscow, Khmelnitsky, and Rome).

The structure of the work: The dissertation consists of an introduction (19.471 characters), 3 chapters (Chapter I - 64.235 characters, Chapter II - 63.887 characters, Chapter III - 89.700 characters), results (14.771 characters) and the references used. The volume of the research work is 152 pages (252.064 characters), which includes 12 tables and 17 pictures.

STRUCTURE OF DISSERTATION WORK

Introduction

Chapter I. Scientific and methodological foundations of studying the impact of the price mechanism on ensuring competitiveness in the food industry

- 1.1. Functional relationship between competitiveness and the price mechanism and its manifestations in the food industry
- 1.2. Philosophical and economic aspects of different approaches to the competitiveness of food industry enterprises
- 1.3. Characteristics of the impact of the price mechanism on the levels of competition and monopolization of enterprises on different market models

Chapter II. Systematic analysis and assessment of the impact of the price mechanism on ensuring the competitiveness of food industry enterprises in modern times

- 2.1. Analysis and assessment of the current situation on food production and enterprises in Azerbaijan
- 2.2. Price mechanism to ensure the competitiveness of exportimport operations in the food industry
- 2.3. Price mechanism in the formation of innovative products in the enterprise and econometric modelling of the impact of some economic factors on their production

Chapter III. The main directions of improving the price mechanism to ensure competitiveness in the food industry

- 3.1. Support mechanism to ensure competitiveness in the food industry
- 3.2. Priorities for improving the price mechanism to ensure the competitiveness of enterprises
- 3.3. Ways to improve price regulation in different levels of monopolies

Results

List of the used literature

MAIN PROVISIONS PROVIDED FOR DEFENSE

1. From a theoretical standpoint, the impact of the price mechanism on ensuring the competitiveness of food industry enterprises in the Republic of Azerbaijan and global food markets has been revealed.

Improving the national economy's competitiveness is a multidimensional, multi-level, and multi-directional problem. As a result, a thorough strategy is required to solve this problem.

The activities of industrial enterprises require the constant creation and realization of competitive advantages, which supports the achievement of goals and high long-term competitiveness, in modern conditions, which are characterized by the dynamics of the competitive environment, the unpredictability of competitors' behaviour, and frequent changes in the country's priorities. The low level of competitiveness of local businesses is an objective requirement for the development of competitiveness management theory and practice as an effective tool for ensuring industrial enterprise competitiveness and the improvement of scientific approaches to the formation of competitive advantages. It has grown as a result of the impact of local and foreign scientists' basic and applied research on commercial activities and competitiveness. The high level of interest among scientists in the presentation of theoretical and methodological knowledge in the field of competitiveness demonstrates its importance and future prospects²⁰.

Competitiveness is the most significant requirement for a company's success in today's world. An organization's competitiveness refers to its capacity to innovate, produce, and sell items more efficiently than competitors. The enterprise's competitiveness is ensured by its competitive advantages or dominance over competitors in economic, industrial, organizational, social, and market activities. The prerequisites for the operation of an economic mechanism aimed at gaining a competitive advantage are

-

²⁰Səfərova, F.M. "Rəqabət strategiyasının secilməsində qiymət mexanizmindən istifadənin nəzərimetodoloji əsaslarının tədqiqi" AMEA-nın "İqtisadiyyat institunun elmi əsərləri" Bakı 2014, №3. s. 49-55.

insufficient. The mechanism must be efficient in and of itself.

This mechanism operates as follows: when the market price exceeds its natural level, there is a lack of "actual" (purchasing power) demand, which leads to rivalry among sellers, and vice versa, when the market price falls below its natural level, buyers compete for the commodity. In both circumstances, the price competition mechanism has the effect of bringing a commodity's actual price in line with its natural level, allowing it to effectively carry out its regulatory duty by pushing out manufacturing enterprises that issue low-quality or excessively expensive items.

The development and functioning of market interactions in the Azerbaijani economy require the creation of a competitive environment. Competition has emerged as one of the most significant elements of the market mechanism, serving as one of the key drivers of economic development. In today's economy, competitive advantages can be gained by lowering prices and improving quality, which can be accomplished by employing resource-saving technologies, reducing the use of expensive resources, and increasing the number of relatively inexpensive factors of production, all of which necessitate the use of price competition²¹.

2. Identification and assessment of factors impacting food production competitiveness in Azerbaijan is required to secure our country's food security.

Fish, baking, meat and dairy, confectionery, sugar, butter, pasta, canned fruit, beer, wine, salt, tea, and other foods are all produced in Azerbaijan. There are numerous sub-sectors in these areas that can fully supply effective nourishment to the country's population.

Despite the fact that the data in Table 1 suggest that food production is increasing, the data in the table's last two columns highlight a critical issue. The contribution of the food industry to total industrial output varies significantly. When looking at the statistics in the table, it can be observed that, while the food industry is the engine of the country's economy in terms of GDP, its overall growth rate trails considerably

²¹Səfərova, F.M. "Beynəlxalq təcrübədə qiymətin əsaslandırılması prosesinə rəqabətin təsirinin qiymətləndirilməsi" AMEA-nın "Xəbərləri" İqtisadiyyat seriyası,ü Bakı 2014, №2, s. 81-85.

behind the country's overall growth rate.

Food product production in the Republic of Azerbaijan (including drinks and tobacco products) will account for 5.4 percent of gross domestic product in 2020, accounting for 1.6 percent of the value of fixed assets, and employing 1.6 percent of the total workforce.²².

Food is also one of the most important areas of Azerbaijan's agroindustrial complex. Its efficient functioning is critical for ensuring the country's economic stability and raising people's living standards, as the sector will account for 10.6% of the total value of industrial products (excluding drinks and tobacco) in 2020. The private sector has a 9.3% proportion of the industry's private sector²³.

One of the industry's key goals is to revive the activities of industrial firms in the country and its regions, as well as to establish new businesses. Restoration of agro-industrial and industrial processing firms, as well as increasing sales prospects for products cultivated by farmers involved in this industry should be prioritized.

Table 1: Production dynamics in GDP, industry and food industry in Azerbaijan (Real prices, million manats)

Years	GDP	Industrial production	Share of industry in GDP,%	Food industry production	The share of the food industry in GDP,%	The share of the food industry in industrial production, %
2000	4718,1	3640,0	77,1	698,9	14,8	19,2
2005	12522,5	9308,8	74,2	1197,4	9,6	12,9
2010	42465,0	27978,2	67,3	2117,1	5,0	7,6
2015	54380,0	26369,4	48,5	2547,2	4,7	9,7
2016	60425,2	32300,2	53,5	2964,7	4,9	9,2
2017	70337,8	39892,5	52,5	2999,8	4,3	7,5
2018	80092,0	47677,0	59,5	3050,8	3,8	6,4
2019	81896,2	46999,2	57,5	3584,8	4,4	7,6
2020	72432,2	37269.9	51,5	3884.3	5,4	10,4

Source: Azerbaijan State Statistical Committee

According to data, there will be approximately 500 food sector businesses functioning in the country by the beginning of 2021. They

²³www.azstat.org

²²www.azstat.org

are held by non-state entities 98.15 percent of the time and by the government 1.85 percent of the time. In addition, the food business employs 6,042 individual entrepreneurs, which is about 1.5 times the number in 2015 (Table 2).

Table 2: The main indicators of food industry enterprises operating in Azerbaijan

		~ r	01 00 01	-8	zer sarjan
Indicators		YE	Growth rate in		
		2018	2019	2020	2015-2020, %
Number of operating enterprises – total		393	449	487	127,5
Including the public sector	18	7	9	9	50,0
Non-governmental part	364	386	440	478	131,3
Registered individual entrepreneurs engaged in industrial activities, in person	4079	4754	5252	6042	148,1
Cost of industrial products (works, services), in million manats	2307,6	3050,8	3584,8	3884,3	168,3
Industrial production index, as a percentage of the previous year	102,9	101,3	110,8	97,3	X
The share of the sector in the value of gross industrial output produced in the country, in percent	8,8	6,4	7.6	10,4	+1,6
The share of the non-governmental sector in the country's industrial sector, in percent	11,5	7,7	9,3	13,3	+1,8
Volume of investments in fixed assets, million manats	87,9	196,6	140,4	225,1	2,6 times
The share of field investments in the total investment in industry, as a percentage	1,0	2,3	1,5	2,5	+1,5
Manufacturer price index of industrial products, as a percentage of the previous year	102,9	102,9	103,8	101,4	X

a percentage of the previous year Source: Azerbaijan State Statistical Committee, 2021, p.64

According to statistics, in 2020, 487 (19.4%) of the 2515 manufacturing industry firms will be in the food sector, 131 (5.2%) in the beverage industry, and just 13 (0.5%) would be in the tobacco industry. It is worth noting that the number of food production businesses expanded by 8.5 percent in 2020 compared to 2019, outpacing the overall growth rate of processing businesses. Micro firms account for up to 60% of food manufacturing businesses, and their number increased by 16.1% (40 businesses) from 2019 to 2020. Despite a 4.4 percent fall in the number of small businesses (4 businesses), the number of medium and large businesses climbed by 1.8 percent (2 businesses) (Table 3).

Table 3: Grouping of manufacturing industry enterprises by types and size of economic activity

types and size of ceomorne activity				
2019	2020	2020 compared to 2019. In %		
2330	2515	107,9		
1328	1515	114,1		
564	557	98,8		
438	443	101,1		
449	487	108,5		
249	289	116,1		
91	87	95,6		
109	111	101,8		
126	131	104,0		
64	70	109,4		
37	37	100		
25	24	96		
11	13	118,2		
5	7	140		
-	-	-		
6	6	100		
	2330 1328 564 438 449 249 91 109 126 64 37 25 11	2019 2020 2330 2515 1328 1515 564 557 438 443 449 487 249 289 91 87 109 111 126 131 64 70 37 37 25 24 11 13 5 7 - -		

Source: Industry of Azerbaijan. Statistical summary. Baku, 2021, p. 15.

Some food products that were previously imported into the republic are now being produced. Furthermore, Azersun Holding (butter, canned food, tea, sugar), BM - SUN (packaged tea), Coca - Cola (soft drinks), European Tobacco (smoking), Azer - Castel (beer), DAD, Barakat (dairy products), Elvan Turk-Azeri Food Industry LTD (chocolate), Sickendick (sausage products), and other foreign and joint ventures meet the needs of the local market by producing products that meet advanced world standards, thus replacing imports.

Azersun Holding, which has been active in Azerbaijan since 1991, plays a critical role in guaranteeing the country's food security.

3. The state must create and implement a flexible customstariff and competitive innovation strategy to ensure the competitiveness of the country's enterprises' foreign economic activities.

Companies like Azersun Holding, Gilan Holding, Aznar, Az-Granata LLC, and Agrarian Supply and Supply OJSC can compete in the crop product export markets. The competitiveness of the products

processed by these businesses distinguishes them. Az-Granata LLC, for example, has a 100 million package yearly production capacity for wine, soft drinks, cognac, juice and nectar, compote, whiskey, and other products. Products from the company are shipped to 20 countries, including the United States and Germany. Potatoes, tomatoes, onions, and other vegetables will be grown in the country in the near future, coupled with an increase in the number of sophisticated manufacturing firms. The manufacturing of such products should be given special attention.

After studying the wholesale market for fruits and vegetables, we discovered that market entities' operations in the wholesale of these products are insecure. Every year, product imports increase. The costs of vegetables and fruits declared at the border are many times cheaper than the prices supplied to the final consumer, according to customs data. It has been noted that there are numerous intermediates.

The present monopoly on food imports consists of market companies having exclusive rights to import and use particular items under well-known producers' trademarks. Only in exceptional circumstances may the volume of branding on products specified by exclusive right holders exceed 100%²⁴.

Russian businesspeople make large-scale purchases of fruits and vegetables in Azerbaijan's northern regions. The low amount of customs charges imposed by Russia is frequently the cause of price increases. It is quite advantageous for our suppliers to acquire melons and vegetables from Azerbaijan in order to cooperate with Russian partners. It is also true that putting safeguards in place that have been agreed upon with key sellers is critical. Customs authorities are working hard to identify significant suppliers for the country and the supply chain. Antitrust procedures are conducted in the event of unjustified price increases and restrictions on the sale of goods.

The most effective way to reduce the cost of goods and services,

.

²⁴Səfərova F.M."Azərbaycanda rəqabətqabiliyyətli ərzaq məhsulları üzrə istehsal potensialından istifadənin genişləndirilməsi yolları" AMEA-nın İqtisadiyyat İnstitutunun 60 illik yubileyinə həsr edilmiş "İqtisadi artım və ictimai rifah" Beynəlxalq elmi-praktiki konfransın materialları.Bakı 2018. s.541-545.

as well as to eliminate the deficit, is to prevent anti-competitive behaviour. A healthy competitive relationship, which includes the widespread development of competition in this market segment, is the most effective way to reduce the cost of goods and services, as well as to eliminate the deficit. Simultaneously, big-scale trade networks must seek to eliminate superfluous intermediary institutions and prejudice on a large scale. In addition, the need for infrastructure in the food and fruit and vegetable markets, as well as extra direct contracts between foreign food producers and local trade networks must be identified.

Despite an increase in milk and dairy product production in the country in recent years, data on the food balance shows that imports of these items to Azerbaijan have increased as well. On the one hand, the small number of dairy processing enterprises in the country is the primary reason for the vast volume of dairy products imported into the country, while the volume of natural milk raw materials for industrial demands does not meet the essential requirements. Furthermore, between 2015 and 2020, the cost of producing 1 quintal of milk in the country climbed by 12.68 manats, while the selling price increased by 12.39 manats.

According to the country's Strategic Roadmap, expanding the scope and production capacity of processing enterprises operating in the country is critical in order to produce large quantities of high-quality, market-oriented dairy products, as well as maximizing the use of natural milk raw materials production capacity.

The liberalization of international economic activity in the Republic of Azerbaijan has resulted in a large increase in food imports from other countries. As a result, the future expansion of foreign economic activity in Azerbaijan's food market is based on the dynamics of local food production first and foremost. Increasing the competitiveness of the agro-industrial sector and its products is the only way to ensure the protection of local producers and food security in Azerbaijan.

It should be emphasized that large multinational food corporations are actively interested in the Azerbaijani food sector. Local producers are suppressed through the process of export subsidies, which is aided by dumping prices and the active support of exporting countries'

governments. The outcomes of Azerbaijan's long-running discussions for membership in the World Trade Organization (WTO) are crucial for the country's establishment of a successful foreign economic policy in the food market.

For each producer, each corporate organization operating in modern conditions, the question of price is a question of survival. Market circumstances and price variations influence the overall stability of the country's economy, as well as the population's living standards and the amount of social tension. The company's price policy is a key component of its competitive strategy. This is especially important for the formation of prices for innovative products²⁵.

4. Using econometric modelling, the dependence of food production on fixed assets and the number of employees was investigated, and it was discovered that the increase in fixed assets, and thus the armament of labour, during the studied period was primarily due to intensive development trends based on innovative factors.

Food production in industry has a critical part in feeding the world's population. During the period 2005-2019, we constructed the Cobb-Douglas-type function of the dependency of Azerbaijan's food production on fixed assets and the number of employees engaged in food production. Relevant statistical collections and information on the website of the ConEC of the Republic of Azerbaijan were used for this purpose. The collected data are described in Table 4.

University Faculty of Education 54300 Sakarya, TURKEY, p. 1036-1039. 19

²⁵ SafarovaF.M."Effective Utilization of Scientific-Technical and Innovative Potential as an Important Factor of the Development of the Non-Oil Sector". 5 Th International Conference On Lifelong Education And Leadership For All 9-11 July, 2019 Baku, Azerbaijan Abstract Book, Online Publication: September 19, 2019 ICLEL Publication: ICLEL Conferences Sakarya

Table 4: Some indicators of food industry production

Year	The current volume of food production (million. manat) Y	Number of employees in food production (thousand persons) L	Current food production funds, current (million man) K	Volume of food products per 1 employee in food industry (thousand man), in current prices Y/L	Volume of fixed assets per 1 employee in the food industry (thousand man), in current prices K/L
2005	1 094,5	13,0	371,7	84,192	28,592
2006	1 154,3	13,8	441	83,645	31,957
2007	1 254,9	15,8	499,4	79,424	31,608
2008	1 381,0	17,0	589	81,235	34,647
2009	1 520,3	17,4	607,9	87,374	34,937
2010	1 924,6	15,1	779,9	127,457	51,649
2011	2 107,6	14,6	786,5	144,356	53,870
2012	2 574,8	17,0	856,4	151,459	50,376
2013	2 286,4	18,8	796,9	121,617	42,388
2014	2 422,0	20,6	857,7	117,573	41,636
2015	2 307,6	18,8	884,2	122,745	47,032
2016	2 964,7	18,8	910,4	157,697	48,426
2017	2 999,8	20,8	939,4	144,221	45,163
2018	3050,8	21,5	953,5	141,898	44,349
2019	3584,8	22,3	985,7	160,753	44,202
2019/		_			
2005	3,28 times	1,72 times	2,65 times	1,91 times	1,55 times

Source: Azerbaijan industry, 2005-2018 years. SSC AR. Baku. <u>www.stat.gov.az</u> has been compiled by the author

It is known from economic theory that the Cobb-Douglas function can be used to describe the dependence of production on fixed assets and labour. This function can be described as follows.

$$\frac{Y}{L} = C(\frac{K}{L})^{\alpha} \tag{1}$$

Here Y – volume of food production (in terms of value), L – number of employees engaged in food production, C – a certain constant quantity, α - the coefficient of elasticity. If the time factor is also taken into account, then Equation (1) can be written as follows.

$$\frac{Y}{L} = C(\frac{K}{L})^{\alpha} e^{\beta t} \tag{2}$$

(2) Let us use the econometric package to determine the parameters of the model. The obtained model is described as follows.

$$LOG(Y/L) = 2.02385371968 + 0.673928203991* LOG (K/L) + 0.0319938061912*@TREND + [AR(3)= -$$

Here @TREND – times (year), AR (3) and shows the 3rd order autocorrelation of the balances.

(3) The equation can also be described.

$$Y = 7,5674K^{0,67}L^{0,33}e^{0,03t}$$
 (4)

Its economic meaning is that a 1% increase in fixed assets in the food industry increases food production by 0.67%, and a 1% increase in the number of employees increases production by 0.33%. Because of scientific and technological progress, the coefficient of the time variable (t) reveals that production increases by 3% per year. Each of the explanatory variables in the model appears to be statistically significant with 99 percent reliability, according to the econometric statistics of the developed model:

Prob(C=0)=0,0008, Prob(K/L=0)=0,0003, Prob(@TREND=0)=0,0000, Prob(AR(3)=0)=0,0002.

R-squared = 0.9739 was discovered to be the value of the determination coefficient. This indicates that 97.39 percent of the amount of fixed assets per employee, including the level of labour armament in the fund, determines the amount of food per worker.

As a result, the regression equation yielded values that were close to the genuine values, with no autocorrelation in the residues.

Checking if the leftovers are not heteroskedastic is one of the markers of the model's competence. The Breusch-Pagan-Godfrey test was used for this purpose. It was found that $\operatorname{Prob} F(2.10) = 0.9473$, and since this value is greater than 0.05, it was concluded that the fossils are not heteroskedastic. Finally, the Jarque-Bera normality test was performed to check the normal distribution of the residues. The results of the Jarque-Bera test show that the mean and median values of the residues are equal to each other with an accuracy of 0.01. Thus:

The axis of symmetry shifted slightly to the right expressing Skewness=0,394519. In addition, Kurtosis = 1,964642. Probability =

0.631953 and since this value is greater than 0.05, we conclude that the residues are distributed by normal law. All necessary tests of the econometric model have been performed and satisfactory results have been obtained.

In conclusion, we conclude that a 1% increase in fixed assets in the food industry between 2005 and 2019 increased food production by 0.67% and a 1% increase in the number of employees by 0.33%. This means that the volume of production in the analyzed period was mainly due to an increase in the volume of fixed assets, and thus the provision of labour in the fund. When we consider that the percentage of machinery and equipment in the structure of industrial production funds has increased from 36.3 percent in 2005 to 50.5 percent in 2019, we can conclude that intensive development based on creative factors has expanded in the past. Furthermore, the results of an average yearly increase of 3% in the food business due to scientific and technological improvement, according to the research of the econometric model, confirm the conclusions we have reached.

At the same time, while the number of employees in the food sector expanded by 1.6 times over the study period, the growth factor did not play a significant role in raising production, since the volume of food consumed per employee increased by 1.71 times.

5. Proposals have been made to improve governmental regulation and legislative frameworks in order to use the pricing mechanism to ensure and increase the competitiveness of Azerbaijan's food industry enterprises.

Competition is one of the most important requirements for self-regulation of prices and tariffs in accordance with supply and demand, as well as achieving a demand-price balance in the goods and services market. This is because, in a market system with free competition, any market entity that raises the price of goods or services forces consumers to look for alternative possibilities. Alternative competing market entities offering a homogeneous product at a lower price compel this market entity to sell cheaply by adjusting pricing to market demand. A general price is generated for similar products as a result of competition, and a market mechanism for price formation is engaged.

The research investigates the price mechanism to ensure

competitiveness in the sphere of food production and explores ways to improve it from this perspective, as well as from the perspective of the initiatives described in the Strategic Roadmap.

According to the report, food manufacturing enterprises are less likely to respond to foreign company contacts, employ technology, gain certificates, band together as a group, and engage in more export-oriented operations. Additionally, they extract robust enough production indices from both direct and indirect trade. In terms of sales, it's reasonable to believe that access to the worldwide market provides enterprises with an opportunity to expand their reach. When it comes to the source, it's safe to anticipate that businesses who can import modern processing equipment and technology from other countries will be able to make a substantial profit. However, this could mean that indigenous products, such as agricultural products and packaging, aren't as competitive as imported products or are of lesser quality²⁶.

As a consequence of the investigation, the following conclusions were reached, as well as some recommendations:

- 1. The expansion of the local food industry, as well as its transformation into a highly efficient and high-income sector of the economy, is a critical aspect in maintaining the country's food security, and it has implications for the state's overall economic system. The continuous reliance of firms on imports of raw materials and technologies, as well as the fact that large retail chains often choose to position goods from foreign manufacturers, are the reasons for the high degree of competitiveness in Azerbaijan's food production.
- 2. In the international practice of fostering creative entrepreneurship, the building of the required legislation and business environment for the establishment and effective operation of organizational models (industrial camps, business incubators, and so on) has been successfully utilized.
- 3. The strategic offensive actions of the firm are virtually usually used to gain a competitive edge. The length of time it takes for an attack

91-94.

²⁶ Сафарова Ф.М. "Ценообразующие факторы конкурентоспособности азербайджанской промышленности во внешней торговле" Министерство Образования Украины, Хмельницкий национальный университет, факультет «Экономики и управления» Финансовые аспекты развития экономики Украины: теория, методология, практика. Сборник молодых ученых Хмельницкий, 2019, с.

tactic to acquire an advantage is determined by the level of competitiveness on the field. The provision of the necessary number and range of fixed assets, as well as the full utilization of these funds, is one of the most essential factors in boosting the efficiency of production in businesses. As a result, increasing the efficiency of capital investments and fixed assets is one of the most important responsibilities for any business.

- 4. The research built a Cobb-Douglas-type function on the dependence of food production on fixed assets and the number of workers engaged in food production in Azerbaijan from 2005 to 2019, and acquired the necessary results in the context of predicting future food industry developments.
- 5. Small and medium enterprise competitiveness, export of highvalue-added products, and the adoption of an innovative industrial development plan in Azerbaijan can all be aided by the formation of clusters of small and medium businesses. It is also vital to provide favourable conditions for international companies to participate in the manufacture of global brands, which would allow Azerbaijan to compete on the field. Cluster formation is crucial from a strategic standpoint. They are viewed as a single integration mechanism for critical food production areas. The formation of clusters implies the improvement of the pricing mechanism, which takes into account the interrelated field interests and stimulates mutually beneficial activities increase the competitiveness of production. competitiveness of the cluster-creating sector will be boosted by the competitiveness of the food industry as a whole, providing a new impetus to the industry's overall development.
- 6. Azerbaijan is unable to raise its proportion of finished goods exports, particularly food exports. The country's export business is based on raw materials. Despite talks about selling non-renewable resources, hydrocarbon exports continue to be the most important source of international commerce, leading to an increase in imports. Simultaneously, in the face of a shrinking domestic market, an increasing number of businesses are forced to diversify into international trade. Most Azerbaijani businesses, based on experience, are not ready to compete actively. As a result, the industry is in such a

precarious position that no substantial innovations to improve enterprise competitiveness have occurred. However, the only way out of the current economic crisis is to develop competitive manufacturing that is centred on the requirements of consumers. In this way, competitiveness is a necessary condition for local firms to thrive.

- 7. The study allows for the development and enhancement of competitive relations in the Azerbaijani economy, as well as the following recommendations:
 - Azerbaijan's competition law needs to be updated;
- Increasing the effectiveness of administrative barriers-reduction efforts through enhancing the licensing system for certain activity;
- Accelerate the emergence of price competition in sectors that could be competitive;
- Increase domestic production, to arrange the creation of importsubstituting items, to boost economic activity, to produce an abundance of products, to increase domestic production;
- Collect import taxes and lower tax levies through fostering a more fertile competitive environment for entrepreneurs and businesses;
- Reduce and implement unreasonable price incentives for individual economic entities or groups of economic entities, create and develop clusters that require minimal intervention in the development of competition mechanisms; develop measures to accelerate the elimination of price imbalances in sectors (primarily industry and agriculture); measures to reduce and implement unreasonable price incentives for individual economic entities or groups of economic entities; measures to create and develop clusters that require minimal intervention in the development of competition mechanisms.
- 8. The lack of independent sales and distribution channels is one of the most serious issues facing micro, small, and medium businesses. To sell their products, these entrepreneurs turn to organizations with enormous sales and distribution infrastructures. Simultaneously, the company selling the manufacturer's goods adds its profit margin (30-50%) to the product, causing local product prices to rise and be sold in the market at a price that is quite similar to similar foreign (particularly imported from the CIS) competitors. As a result, low sales, a lack of

competitiveness, and an increase in the sale of imported items occur. Therefore, we propose to establish a sales-distribution company with state support to sell the products of 20-30 non-competitive enterprises operating in several regions (economic regions) and not included in the same portfolio, allowing carrying out sales throughout the country.

9. During the pandemic, the existing mechanisms, interrelationships, and interdependencies of economic process management, organization, control, and stimulation at the macro and meso-level structures of the national economy were radically disrupted. At the same time, the dissertation's analysis and diagnosis of the current situation leads to the conclusion that in the post-pandemic economy, the importance of research findings, proposals, and recommendations for improving competitiveness, based on best world practices, national realities, and potential, will skyrocket.

The following published scholarly publications of the author reflect the major topic of the study:

- 1. Səfərova F.M. "Qiymət siyasəti milli iqtisadiyyatın tənzimlənmə vasitəsi kimi" İqtisad elmləri: nəzəriyyə və praktika j., № 1, Bakı 2011, s. 169-175.
- 2. Səfərova F.M. "Müasir dövrdə dövlətin qiymət siyasətinin formalaşmasının konseptual əsasları və prioritetləri" "Milli iqtisadiyyatın inkişafı və səmərəliliyinin yüksəldilməsi problemi"nə həsr edilmiş Beynəlxalq Konfransın materialları, Bakı 2012, s. 47-50.
- 3. Səfərova F.M."Daşınmaz əmlak bazarında qiymətləndirmə fəaliyyətinin tənzimlənmə problemi" Gənc tədqiqatcıların I Beynəlxalq Elmi Konfransı, Bakı 2013, s. 21-22.
- 4. Səfərova F.M. "Beynəlxalq təcrübədə qiymətin əsaslandırılması prosesinə rəqabətin təsirinin qiymətləndirilməsi" AMEA-nın "Xəbərləri" İqtisadiyyat seriyası,ü Bakı 2014, №2, s. 81-85.
- 5. Səfərova F.M. "Rəqabət strategiyasının secilməsində qiymət mexanizmindən istifadənin nəzəri-metodoloji əsaslarının tədqiqi" AMEA-nın "İqtisadiyyat institunun elmi əsərləri" Bakı 2014, №3,

- s. 49-55.
- 6. Səfərova F.M. "Qiymətləndirmə fəaliyyətinin dövlət tənzimlənməsinin rəqabət qabiliyyətinin artırılması amili kimi" Gənc tədqiqatcıların III Beynəlxalq Elmi Konfransı, Bakı 2015, s. 563-565.
- 7. Сафарова Ф.М. "Цен образующие факторы конкурентоспособности Азербайджанской промышленности во внешней торговле» «Экономика и предпринимательство» журнал № 8, Москва, 2015, с. 173-175.
- 8. Səfərova F.M. "Təbii inhisar subyektlərində qiymətlərin tənzimlənməsi təcrübəsi və onun təkmilləşdirilməsi yolları" Azərbaycan Kooperasiya Universiteti "Elmi-praktiki" jurnal № 4 2015, s. 97-105.
- 9. Səfərova F.M. "Qiymətin əsaslandırılması prosesinə rəqabətin təsirinin müəyyən edilməsi məsələləri" Doktorantları və gənc tədqiqatçıların XIX respublika elmi konfransının materialları Bakı 2015, s. 202-204.
- 10. Səfərova F.M. "Azərbaycanda rəqabətqabiliyyətli ərzaq məhsulları üzrə istehsal potensialından istifadənin genişləndirilməsi yolları" AMEA-nın İqtisadiyyat İnstitutunun 60 illik yubileyinə həsr edilmiş "İqtisadi artım və ictimai rifah" Beynəlxalq elmipraktiki konfransın materialları. Bakı 2018, s.541-545.
- 11. Сафарова Ф.М. "Ценообразующие факторы конкурентоспособности азербайджанской промышленности во внешней торговле" Министерство Образования Украины, Хмельницкий национальный университет, факультет «Экономики и управления» Финансовые аспекты развития экономики Украины: теория, методология, практика. Сборник молодых ученых Хмельницкий, 2019, с. 91-94.
- 12. Safarova F.M. "Effective Utilization of Scientific-Technical and Innovative Potential as an Important Factor of the Development of the Non-Oil Sector". 5 Th International Conference On Lifelong Education And Leadership For All 9-11 July, 2019 Baku, Azerbaijan Abstract Book, Online Publication: September 19, 2019 ICLEL Publication: ICLEL Conferences Sakarya University Faculty of Education 54300 Sakarya, TURKEY, p. 1036-1039.

- 13. Safarova F.M. "The Provision of Education: Research and Innovation Unity is an Important Factor in Raising the Competitiveness of the National Economy" 5 Th International Conference On Lifelong Education And Leadership For All 9-11 July, 2019 Baku, Azerbaijan Abstract Book, Online Publication: September 19, 2019 ICLEL Publication: ICLEL Conferences Sakarya University Faculty of Education 54300 Sakarya, TURKEY, p. 808-811.
- 14. Səfərova F.M. "Aqrar sahədə rəqabətqabiliyyətliliyinin artırılmasının stimullaşdırılması mexanizmləri" Azərbayacan Respublikası Təhsil Nazirliyi Azərbaycan texniki Universiteti, 18-20 dekabr 2019-cu il "Azərbaycan və Türkiyə Universitetləri: təhsil, elm, texnologiya" I Beynəlxalq elmi-praktiki konfrans, II hissə, s. 541-545.
- 15. Safarova F.M. "OPPORTUNITIES AND PRIORITIES OF AZERBAIJAN'S TRANSITION TO THE CONCEPT OF SUSTAINABLE DEVELOPMENT" 238 -.246 55th International Scientific Conference on Economic and Social Development Development Book of Proceedings Vol. 3/4, p. 211-218

The defense of the dissertation will be held on "29" April on 2022 at 13:00 at the meeting of the Dissertation Council FD 2.22 operating under the Azerbaijan State Oil and Industry University.

Address: AZ 1010, Azerbaijan, Baku c., Azadlig avenue 16/21

The dissertation is accessible at the Azerbaijan State Oil and Industry University Library.

Electron versions of dissertation and its abstract are available on the official website of the Azerbaijan State Oil and Industry University.

Abstract was sent to the required addresses on "28" march 2022.

Signed for print: 28.03.2022. Paper format: 60x84 1/16. Order 10/03. Volume 1 pst. (43484 symbols) Offset paper №1. Number of hard copies: 20.

"AA – Polygraph" Production and Commercial Association e-mail: capevi@internet.ru Tel.: (+99455) 201-2809