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REGULATION ISSUES OF PRICE FLUCTUATIONS IN THE AGRICULTURAL MARKET

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Formulation of the problem. In the article, the main factors that cause price fluctuations in agricultural products have been considered and theoretical approaches to the impact of price fluctuations on the agricultural market have been analyzed. The need to minimize the effects of price volatility and the regulatory policies of other countries' experiences for this purpose have been examined. *The aim of the study* is to to characterize the issue of regulation of price fluctuations in the agricultural market. *Research methodology*. In the course of the research, both general theoretical methods were used: analysis and synthesis, deduction and induction, generalization of reference and scientific literature, theoretical modeling, methods of grouping and comparison. *The research hypothesis.* The effects of policies aimed at preventing price fluctuations in the agricultural market or compensating for the effects of these fluctuations in the economies of these countries have been studied. *Presentation of the main material*. The level of price volatility in the agricultural sector in Azerbaijan and the main factors affecting price volatility in the market have been also considered. The level of price volatility in the market during the seasonal and non-seasonal periods has been analyzed on the example of the potato and onion sector, which is the main food product for our country and has an important share in the consumer basket. Based on the leading research and analysis, recommendations have been made to reduce the negative effects of price volatility in the agricultural market. *The originality and practical significance* of the study lies in the development of recommendations for improving education in the field of tourism in Azerbaijan. *Conclusions of the study*. The main decrease in prices of agricultural products in Azerbaijan occurs mainly during the production of fruits and vegetables. In the post-production period, imported products dominate the market. Regulatory policy should focus on both reducing the seasonal losses of producers and reducing dependency on imports in post-production period.

Key words:
agrarian market, market regulation, price volatility, market risk, producer price index.

ПИТАННЯ РЕГУЛЮВАННЯ КОЛИВАНЬ ЦІН НА АГРАРНОМУ РИНКУ

Постановка проблеми. У статті розглянуто основні фактори, що спричиняють коливання цін на сільськогосподарську продукцію, та проаналізовано теоретичні підходи до впливу коливання цін на сільськогосподарський ринок. Було досліджено необхідність мінімізації впливу волатильності цін та регуляторної політики з досвіду інших країн для цієї мети. *Метою дослідження* є характеристика питання регулювання коливань цін на аграрному ринку. *Методологія дослідження*. У ході дослідження були використані обидва загальнотеоретичні методи: аналіз і синтез, дедукція та індукція, узагальнення довідкової та наукової літератури, теоретичне моделювання, методи групування та порівняння. *Гіпотеза дослідження.* Досліджено вплив політики, спрямованої на запобігання коливанню цін на аграрному ринку або компенсацію наслідків цих коливань в економіці цих країн. *Виклад основного матеріалу.* Також було розглянуто рівень мінливості цін в аграрному секторі Азербайджану та основні фактори, що впливають на волатильність цін на ринку. Проаналізовано рівень цінової волатильності на ринку в сезонний і несезонний періоди на прикладі картопляно-цибульного сектора, який є основним продуктом харчування для нашої країни і займає важливу частку в споживчому кошику. На основі провідних досліджень та аналізу розроблено рекомендації щодо зменшення негативного впливу волатильності цін на ринку сільськогосподарської продукції. *Оригінальність та практична значущість дослідження* полягає у розробці рекомендацій щодо покращення освіти в галузі туризму в Азербайджані. *Висновки дослідження*. Основне зниження цін на сільськогосподарську продукцію в Азербайджані відбувається в основному під час виробництва фруктів і овочів. У пост-виробничий період імпортна продукція домінує на ринку. Регуляторна політика повинна бути

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спрямована як на зменшення сезонних втрат виробників, так і на зменшення залежності від імпорту в поствиробничий період.

Ключові слова:
аграрний ринок, регулювання ринку, волатильність цін, ринковий ризик, індекс цін виробників.

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Problem statement. The agricultural sector has more price volatility than other sectors of the economy. Prices of agricultural products peaked in 2008 and 2011, and agricultural products were characterized by high price volatility. This situation can be explained by four main factors: i) climate change, the spread of diseases and pests, ii) price elasticity of agricultural products, iii) declining agricultural production and iv) population growth and income levels [9].

The risk connected to product prices is considered to be the most economically sensitive among the risks impacting farmer behavior. Various solutions are often developed to enable farmers to make new decisions about their economic activities, use market tools, or diversify their income sources in order to reduce price risk [1].

The volatility of agricultural commodity prices is a major source of concern. Politicians and other actors in the food supply chain should be aware of agricultural price fluctuations and better understand potential changes. Farmers in some nations, for example, face a variety of risks that were previously faced by market and price support strategies. Due to the volatility of the prices that farmers receive from the sale of their products or pay for the means of production, market risk is one of the most important elements affecting agricultural development [7].

Analysis of recent research and publications. The change in price level is measured by price volatility. Volatility indicates how much and how quickly the value of a product changes over time. Although this concept is clear, there is no clear definition of volatility and its measurement tends to be more subjective. In economic theory, volatility refers to two main concepts: volatility and uncertainty; The first describes general changes, while the second refers to unexpected changes.

Price fluctuations are both a typical element of the agricultural market and a required prerequisite for its existence. The essence of the price system is that when a product becomes scarce, its price rises. This leads to a reduction in consumption and more investment in the production of this product. However, when price changes become increasingly uncertain and subject to excessive changes over a long period of time, the effectiveness of the price system begins to deteriorate [2].

In both developed and developing countries, price volatility can have a significant detrimental influence on the agricultural, food, and other sectors of the economy. The following are the primary elements that influence price changes.

• Weather and climate change - Unpredictable weather conditions are the most common and unpredictable cause influencing price volatility.

• Inventory level - Inventories are important in decreasing the short-term mismatches between supply and demand.

• Energy prices - Price volatility shifts from energy markets to agricultural markets as demand for production resources such as fertilizers, transportation, and biofuels grows.

• Exchange rates - By affecting domestic commodity prices, foreign exchange movements can have an impact on global food security and competitiveness.

Rising demand – when there is a case that supply cannot keep up with demand, there is increasing pressure on commodity prices. The elasticity of food demand will drop as per capita incomes increase globally, with incomes predicted to increase by 50% in many poor countries, requiring greater price adjustments to effect demand.

• Resource limitations - Higher means of production costs, slower technology adoption, more expansion into surrounding areas, and restrictions on double farming and irrigation water limit production growth rates.

• Trade limitations - Both export and import restrictions increase price volatility in international markets [8].

Agriculture markets have also been more open and competitive in recent decades as a result of changes in agricultural policy and regulation, particularly WTO agreements. As a result, price volatility has increased and household incomes have changed [11]. There is a lot of research and studies on price changes in the agricultural market. Various studies have examined

the effects of price fluctuations on the agricultural market, farmers, consumers and the state.

Mohanty and Klau (2001), who studied fourteen emerging market economies for the 1980s and 1990s, argue that external factors influencing food prices have a significant effect on inflation. In these economies, food prices account for a higher proportion of the consumer price index than in developed industrial countries. In addition, agricultural prices are said to fluctuate depending on weather conditions and foreign trade restrictions. Dostie et al. (2002) examined Madagascar's agricultural sector and poverty levels, and reported that seasonal production affected both agricultural prices and consumption patterns. The study also discusses various dimensions of seasonal import policy in addressing seasonal problems.

Based on probite models in developing market economies, Domach and Yucel (2003) suggested that increased agricultural production growth reduced the likelihood of factors contributing to higher inflation. Bare and Yucel (2004) found an intuitive association between agricultural prices in Turkey and food and general consumer prices, and used cross-correlation and vector altruistic models to investigate this relationship. They revealed that the increase in agriculture price inflation was statistically significant when compared to food prices and the overall consumer price index.

The purpose of the article is to to characterize the issue of regulation of price fluctuations in the agricultural market.

Presentation of the main material. Agricultural price volatility has led governments in both developed and developing countries to undertake measures aimed at preventing or minimizing these shifts throughout the twentieth century. Interventions in agricultural markets, whether unilateral or multilateral, became the norm in the 1980s. To regulate domestic prices, the US utilized support prices and stockpiles. A comparable system existed in the European Union, in which exchange rates ("green rates") were applied to a specific product for commerce between EU member states. Interventions for developing-country products were either multilateral (for example, through international trade agreements) or regulated through internal institutions.

There were buffer stocks in Bangladesh, India, Indonesia, Mexico, Philippines and South Korea, buffer funds in Ivory Coast, Papua New Guinea and South Korea, monopoly marketing agencies in most of Africa and parts of Latin America and Asia, and variable tariff plans in Chile, Malaysia and Venezuela.

Since the 1980s, many countries have redefined the role of the state in the economy. Reforms in agricultural markets have been an important part of these efforts. The reforms aimed to change the functioning of agricultural markets by renewing market structures and removing or changing the mandate of key institutions [10].

In many developing countries, plans of action (national and multinational) faced serious challenges in the 1980s. Producers and governments of producing countries were generally overly optimistic about the prices they could achieve under weak market conditions. At the same time, the costs of control-related inefficiency have increased over time. For example, high coffee prices have resulted in increased arable land in many countries with relatively high production costs, particularly in Africa. In Brazil, quota restrictions hindered low-income production.

As a result, as prices weakened in the 1980s, nearly all previously successful national intervention policies faced financial difficulties. International commodity agreements also failed to adapt to changes in the market, and by 1996 all economic clauses in the agreements were repealed or went bankrupt.

In many cases, donors have called for action to save or rebuild struggling national institutions of stability. Market liberalization, particularly the abolition of monopoly regulations and the radical reduction of bureaucracies, were key conditions for such aid. Therefore, a series of reforms aimed at liberalizing the agricultural markets of developing countries were initiated in the 1980s and 1990s, particularly with the encouragement of multilateral lenders such as the European Union, USAID, and the World Bank.

Overall, the extremely high price volatility in global agricultural markets signals a growing threat to global food security. To reduce the susceptibility of countries to price fluctuations, policies should improve market performance and equip countries to better cope with the extreme negative effects of volatility [2].

The aim of the policy is to help make the market more resilient to external shocks, reduce waste, increase supply at prices offered to local markets, and increase productivity, especially for small producers. Public investment in agricultural research, institutions and infrastructure is needed to increase the sector's productivity, re-

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silience to climate and climate change, and resource scarcity.

Investments are necessary to reduce post-harvest losses. Recognizing that price volatility will continue to be a feature of agricultural markets, a coherent policy is needed to both minimize price volatility and limit its adverse effects.

Increased market transparency can reduce price volatility. Further efforts should be made to improve global and national information and monitoring systems for market forecasts, including more reliable information on the production, inventory and trade of food safety sensitive products. Import and export restrictions etc. Increasing or decreasing the skewed policies like

The 2014-2020 Common Agricultural Policy (CAP), instead of eliminating price volatility, mainly aims to compensate farmers for the negative effects of price volatility and to combat income volatility. After this policy, interventions in the agricultural market were indeed reduced and only limited intervention measures are taken when prices fall below certain levels. The main policy instrument is direct payments, which provide farmers with a stable income regardless of market conditions. In addition, member states can access support through rural development programs through three risk management tools (insurance schemes, investment funds and income stabilization tools) [4]

There are fluctuations in prices depending on many factors in the agricultural market in Azerbaijan. The main factor affecting price volatility is high seasonal production. However, the market share and position of imported products, rising and falling prices of similar products in the world markets, production volumes due to climatic conditions and other unforeseen risks (for example, decreased demand due to the pandemic) are the main factors affecting it. prices in the agricultural market.

The changes in the producer price index of agricultural products in 2013-2021 period are given in Figure 1.

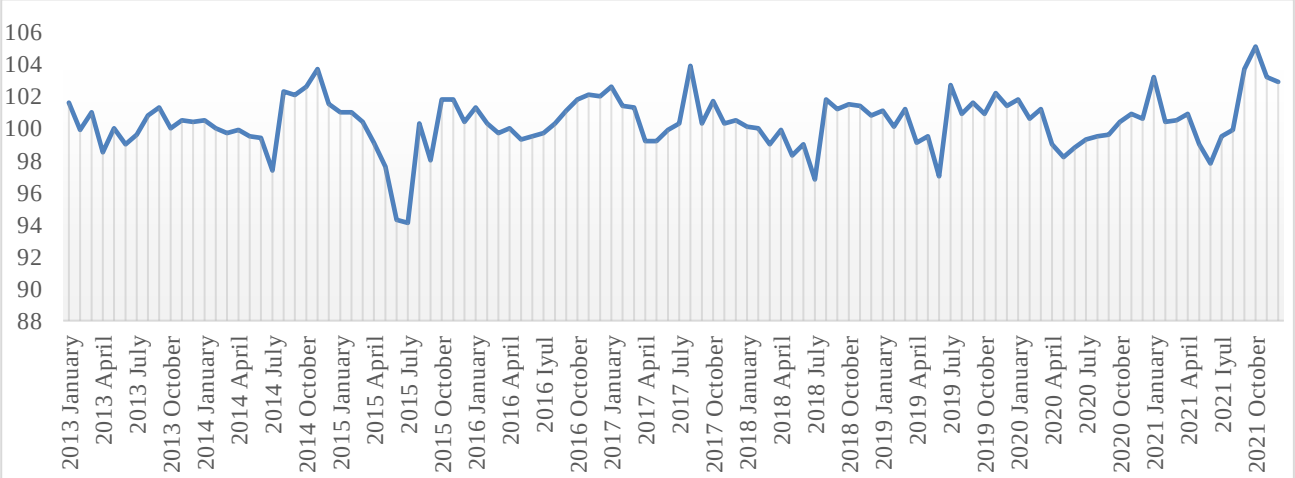

Figure 1 – Producer price index of agricultural products, (compared to the previous month)
Source: The State Statistical Committee of the Republic of Azerbaijan

The graph illustrates that the lowest level of agricultural producer prices occurred in the months of June and July 2015. In general, the lowest prices were found in June-July, while the highest prices were noticed in the winter months. As a result, it is apparent that the increase in production throughout the production season has a direct impact on the price level.

Let's look at the level of price fluctuations in the agricultural market in the example of the potato and onion sector, which is considered the main food product in Azerbaijan and is consumed almost all year round. As can be seen in Figure 2, prices in the potato sector fluctuated sharply between July 2015 and July 2021. The lowest price was 0.30 AZN/kg in July 2018, while the highest was 1.40 AZN/kg in April 2019. Prices were lowest in July-August, the manufacturing season of all years, and highest in March-April, according to the general pattern.

The wholesale price dynamics of onions are depicted in Figure 3. The price level in the onion sector fluctuated at different times of the year, just like it did in the potato sector.

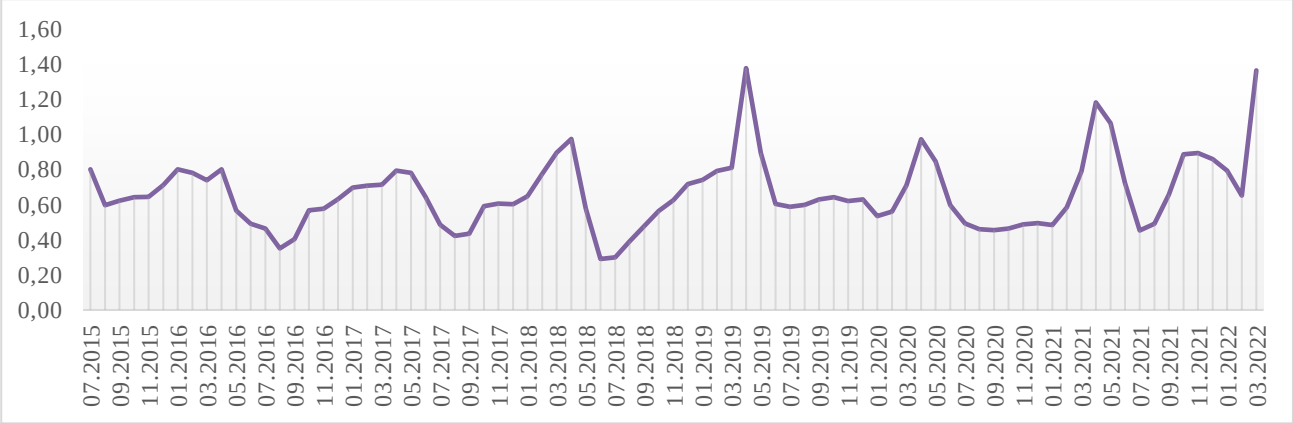

Figure 2 – Monthly wholesale price dynamics of potatoes
Source: Baku-Meyveli wholesale market

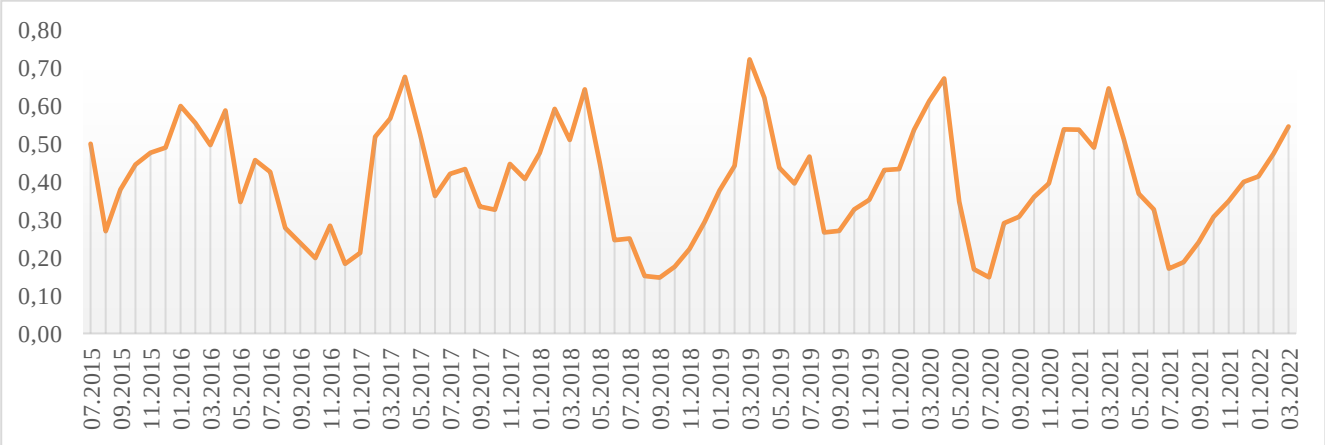

Figure 3 – Monthly wholesale price dynamics of onions
Source: "Baku-Meyveli" wholesale market

There was a price differential of more than 5 times during one production cycle. The most unfavorable months for onion producers were October 2016, September 2018, and July 2020. Price changes have happened practically every year, as shown in Figure 3. The sector's further development is hindered by such price volatility uncertainties.

Conclusions and prospects for further research. According to the results of research and analysis on price volatility in the agricultural market, it has been determined that price volatility in the agricultural market poses a significant risk for market participants and both developed and developing countries follow regulatory policies to manage this risk. Regulatory policies regarding price volatility in the agricultural market began to take shape mainly after the 1980s.

Fluctuations in prices are inevitable due to climate change in the agricultural market, the impact of diseases and pests, changes in population and income levels, and other factors.

Especially in developing countries, the excess supply resulting from the increase in production during the season causes a negative condition and loss of income for the producers. Uncertainty in the market regarding prices is one of the main factors hindering the development of agriculture. Because the unpredictable level of income does not make producers interested in expanding their activities.

From this point of view, in order to ensure the sustainable development of the agricultural sector in our country, it is necessary to minimize the level of price volatility or to establish a mechanism to compensate for the negative effects of this volatility.

The main decrease in prices of agricultural products in Azerbaijan occurs mainly during the production of fruits and vegetables. In the post-production period, imported products dominate the market. Regulatory policy should focus on both reducing the seasonal losses of producers and reducing dependency on imports in the post-production period. For this purpose, it would be appropriate to establish an intervention mechanism that can quickly intervene in the agricultural market in the country and to expand the logis-

tics infrastructure, including the cold storage infrastructure.

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