



On approval of the Methodology for analyzing socially significant markets

Unofficial translation

Order of the Minister of National Economy of the Republic of Kazakhstan of December 28, 2017 No. 438. Registered with the Ministry of Justice of the Republic of Kazakhstan on January 12, 2018 No. 16215.

Unofficial translation

In accordance with subparagraph 14) of Article 90-6 of the Entrepreneurial Code of the Republic of Kazakhstan I hereby **ORDER**:

1. To approve the appended Methodology for analyzing socially significant markets.

2. In accordance with the procedure established by the legislation of the Republic of Kazakhstan, the Committee on Regulation of Natural Monopolies, Protection of Competition and Consumer Rights of the Ministry of National Economy of the Republic of Kazakhstan shall:

1) ensure state registration of this order by the Ministry of Justice of the Republic of Kazakhstan;

2) within ten calendar days of the state registration of this order by the Ministry of Justice of the Republic of Kazakhstan, send its Kazakh and Russian hard and soft copies to the Republican state enterprise with the right of economic management “Republican Center of Legal Information” for its official publication and addition to the Reference control bank of regulatory legal acts of the Republic of Kazakhstan;

3) place this order on the Internet resource of the Ministry of National Economy of the Republic of Kazakhstan;

4) within ten working days of the state registration of this order by the Ministry of Justice of the Republic of Kazakhstan, submit information on the implementation of measures, provided for in subparagraphs 1), 2) and 3) of this paragraph, to the Legal Department of the Ministry of National Economy of the Republic of Kazakhstan.

3. Control over execution of this order shall be entrusted to the supervising vice-minister of national economy of the Republic of Kazakhstan.

4. This order takes effect on January 1, 2018 and is subject to official publication.

*Minister of
National Economy of
the Republic of Kazakhstan*

T.Suleimenov

“AGREED”

acting Minister of
Investments and Development of
the Republic of Kazakhstan

_____ R. Sklyar

as of December 29, 2017

“AGREED”

Minister of Energy of
the Republic of Kazakhstan

_____ K. Bozumbayev

as of December 29, 2017

Approved by order № 438 as of

December 29, 2017

of the Minister of

National Economy of

the Republic of Kazakhstan

Methodology for analyzing socially significant markets Chapter 1. General provisions

1. This Methodology for analyzing socially significant markets (hereinafter referred to as the Methodology) was developed in accordance with subparagraph 14) of Article 90-6, Article 124-5, subparagraphs 1) and 11) of Article 124-6 of the Entrepreneurial Code of the Republic of Kazakhstan as of October 29, 2015 (hereinafter referred to as the Code) and establishes the procedure for analyzing socially significant markets (hereinafter referred to as the analysis).

2. The basic concepts used in the Methodology are as follows:

1) price elasticity of demand - a measure showing the responsiveness of consumers to changes in a product's price;

2) a socially significant market - a product market, which is subject to state regulation of prices for goods (works, services), in accordance with subparagraph 14) of paragraph 3 of Article 116, Article 124-5 of the Code;

3) a socially significant market entity - an individual or a legal entity that produces (sells) goods (works, services) in socially significant markets;

4) a market under analysis - a product market, which the department of the authorized body considers for its possible classifying as socially significant;

5) the authorized body - the state body overseeing natural monopolies;

6) the department of the authorized body - a department of the state body overseeing natural monopolies.

Other concepts and terms used in the Methodology are applied in accordance with the legislation of the Republic of Kazakhstan on natural monopolies, the Code, as well as other regulatory legal acts of the Republic of Kazakhstan.

3. This Methodology is used to develop proposals for the formation of the state policy on socially significant markets concerning:

1) the rationale for continuing state regulation of prices for goods (works, services) of socially significant market entities, specified in paragraph 1 of Article 124-5 of the Code, after the periods of state regulation of prices are over;

2) the rationale for classifying a market under analysis as socially significant and introducing state regulation of prices for goods (works, services).

4. When conducting the analysis, the department of the authorized body:

1) within 5 working days of the commencing date of the analysis, places information on the commencement of the analysis of a socially significant market or a market under analysis on its Internet resource, indicating the reasons, dates, goals, type of the market (wholesale or retail), inviting to cooperate all the concerned market entities, consumer associations and business associations;

2) obtains from concerned market entities, consumer associations and business associations the results of market research, data on barriers to entry into the market, other information that contributes to objective assessment of competitive situation in the market;

3) requests information required for conducting the analysis from entities engaged in the production (sale) of goods (works, services) in a socially significant market or a market under analysis ;

4) arranges meetings with the involvement of parties interested in the analysis (media, consumer associations, business associations, market entities, state bodies).

The period of conducting analysis does not exceed 12 calendar months.

Chapter 2. Analysis aimed at developing a proposal on the rationale for continuing state regulation of prices for goods (works, services) of socially significant market entities

5. The department of the authorized body conducts the analysis in order to develop a proposal on the usefulness of state regulation of prices for goods (works, services) of socially significant market entities in accordance with the plan for analyzing socially significant markets, which the department of the authorized body approves annually, on or before February 1.

6. The analysis in order to develop a proposal on the rationale for continuing state regulation of prices for goods (works, services) of socially significant market entities includes the following steps :

1) assessment of the competitive environment in a socially significant market in accordance with order № 741 of the Minister of National Economy of the Republic of Kazakhstan “On approval of the Methodology for analyzing and assessing the competitive environment in a product market” as of November 30, 2015 (registered in the Register of state registration of regulatory legal acts as № 12592) (hereinafter referred to as the Analysis Methodology) and paragraph 7 of the Methodology;

2) assessment of the compliance of a socially significant market with the signs of classification as a socially significant market, in accordance with paragraph 8 of the Methodology;

3) evaluation of barriers to entry into a socially significant market to new entities, in accordance with paragraph 9 of the Methodology.

7. The competitive environment in a socially significant market is assessed by comparing its indicators, determined in accordance with the Analysis Methodology, with the following criteria:

1) the value of the Herfindahl - Hirschman market concentration index in a socially significant market meets the criterion of a highly concentrated market;

2) no new entities with the aggregate share of at least 35% have emerged in the socially significant market, during the time period under analysis;

3) no product(s) able to substitute a socially significant product under analysis has (have) appeared in the socially significant market, during the time period under analysis.

If the indicators of a socially significant market do not meet the criteria specified in this paragraph, the department of the authorized body draws up an opinion about the uselessness of continuing state regulation of prices in this socially significant market, and the analysis is over.

If the indicators of a socially significant market meet the criteria specified in this paragraph, the department of the authorized body assesses the compliance of the socially significant market with the signs of classifying it as socially significant, in accordance with paragraph 8 of the Methodology.

8. The compliance of a socially significant market with the signs of classification as a socially significant market is assessed by comparing its indicators with the following criterion :

prices in a socially significant market have a multiplier effect on inflation and competitiveness of basic industries.

If the indicators of a socially significant market do not meet the criterion specified in this paragraph, the department of the authorized body draws up an opinion about the uselessness of continuing state regulation of prices in this socially significant market, and the analysis is over.

If the indicators of a socially significant market meet the criteria specified in this paragraph, the department of the authorized body evaluates the barriers to entry into the socially significant market to new entities, in accordance with paragraph 9 of the Methodology.

9. If within the geographical boundaries established according to the Analysis Methodology, over the past three years, the share of dominance of one market entity or Group of persons has been 90% and more in a socially significant market, the barriers are considered to be significant and insurmountable.

If within the geographical boundaries established according to the Analysis Methodology, over the past three years, the share of dominance of one market entity or Group of persons has been less than 90% in a socially significant market, the barriers to entry into the socially significant market are evaluated using point-based analysis of barriers (economic, technological and administrative ones), in keeping with the form of evaluation of barriers to entry into a product market under analysis or a socially significant market for new entities, in accordance with Appendix 1 to the Methodology.

The final evaluation of barriers to entry into a socially significant market is obtained by summing up the points on the barriers. In this case, if their total is within the range of 1.8-3.0 points, this means there are significant entry barriers in the socially significant market, if it is less than 1.8 points - the barriers are either surmountable or absent.

If the evaluation results show that the barriers to entry into a socially significant market are surmountable or absent, the department of the authorized body draws up an opinion about the uselessness of continuing state regulation of prices in this socially significant market.

If the evaluation results show that the barriers to entry into a socially significant market are significant and insurmountable, the department of the authorized body draws up an opinion about the usefulness of continuing state regulation of prices in this socially significant market.

Chapter 3. Analysis aimed at developing a proposal on the rationale for classifying a market under analysis as socially significant

10. The department of the authorized body conducts the analysis aiming to develop a proposal on the rationale for classifying a market under analysis as socially significant pursuant to applications received by the authorized body from state bodies, entities of socially significant markets or product markets, consumers (hereinafter referred to as the Applicant), according to Appendix 2 to the Methodology.

11. The analysis in order to develop a proposal on the rationale for classifying a market under analysis as socially significant includes the following steps:

1) assessment of the competitive environment in a market under analysis, in accordance with the Analysis Methodology and paragraph 12 of the Methodology;

2) assessment of the compliance of a market under analysis with the signs of socially significant markets, in accordance with paragraph 13 of the Methodology;

3) evaluation of barriers to entry into a market under analysis to new entities, in accordance with paragraph 14 of the Methodology;

4) determination of consumers' net benefit from the introduction of price regulation for goods (works, services) of a market under analysis, in accordance with paragraphs 15, 16, 17, 18 and 19 of the Methodology.

12. The competitive environment in a socially significant market is assessed by comparing its indicators, determined in accordance with the Analysis Methodology, with the following criteria:

1) the Lerner index for a product under analysis has been consistently above 0.8 during a time period under consideration;

2) the value of the Herfindahl-Hirschman market concentration index in a product market under analysis meets the criterion of a highly concentrated market.

If the indicators of a market under analysis do not meet the criteria specified in this paragraph, the department of the authorized body draws up an opinion about inappropriateness of classifying the market under analysis as socially significant, and the analysis is over.

If the indicators of a market under analysis meet the criteria specified in this paragraph, the department of the authorized body assesses the compliance of the market under analysis with the signs of classification as a socially significant market, in accordance with paragraph 13 of the Methodology.

13. The compliance of a market under analysis with the signs of socially significant markets is assessed by comparing its indicators with the following criteria:

1) prices in a market under analysis have a multiplier effect on inflation and competitiveness of basic industries;

2) annual demand for a product under analysis is stable with fluctuations from year to year of no more than $\pm 0 - 5\%$ of the pace of economic development of the Republic of Kazakhstan, in accordance with the measurement of individual signs of socially significant markets, as required by Appendix 3 to the Methodology;

3) annual rise in prices for a product under analysis sold by a market entity (market entities) is over 10% higher than the consumer price index in the Republic of Kazakhstan, according to the measurement of individual signs of socially significant markets, in accordance with Appendix 3 to the Methodology;

4) price elasticity of demand for a product under analysis over a time period under analysis is less than 1 according to the measurement of individual signs of socially significant markets, in accordance with Appendix 3 to the Methodology.

If the indicators of a market under analysis do not meet subparagraph 1) of this paragraph, or two or more criteria specified in subparagraphs 2), 3) and 4) of this paragraph, the department of the authorized body draws up an opinion about inappropriateness of classifying a market under analysis as socially significant, and the analysis is over.

If the indicators of a market under analysis meet subparagraph 1) of this paragraph and at least two criteria specified in subparagraphs 2), 3) and 4) of this paragraph, the department of the authorized body shall evaluate the barriers to entry into the market under analysis to new entities, in accordance with paragraph 14 of the Methodology.

14. The barriers are considered to be significant and insurmountable if, over the past three years, the share of dominance of one market entity or Group of persons has been 90% and more in the product market under analysis within the geographical boundaries established in accordance with the Analysis Methodology.

If over the past three years, the share of dominance of one market entity or Group of persons has been less than 90% in the product market under analysis within the geographical boundaries established in accordance with the Analysis Methodology, the barriers to entry into the market under analysis are evaluated using point-based analysis of barriers (economic, technological and administrative ones), in accordance with Appendix 1 to the Methodology.

The final evaluation of the barriers to entry into the market under analysis is obtained by summing up the points on the barriers. In this case, if the total is within the range of 1.8-3.0 points, this means there are significant entry barriers in the market under analysis, if it is less than 1.8 points - the barriers are either surmountable or absent.

If the evaluation results show that the barriers to entry into the market under analysis are surmountable or absent, the department of the authorized body draws up an opinion about inappropriateness of classifying the market under analysis as socially significant, and the analysis is over.

If the evaluation results show that the barriers to entry into the market under analysis are significant and insurmountable, the department of the authorized body determines the net benefit of consumers from introducing price regulation for goods (works, services) in the market under analysis, in accordance with paragraphs 15, 16, 17, 18 and 19 of the Methodology.

15. The consumers' net benefit from the introduction of price regulation for goods (works, services) in a market under analysis is determined by comparing consumers' benefits from reducing or fixing prices for goods (works, services) in the market under analysis with costs (direct and indirect) of the entities and state budget losses from the introduction of state price regulation for a product (work, service) in the market under analysis using the formula in paragraph 19 of the Methodology.

16. The consumers' benefit is determined by assessing possible reduction in the value of a product under analysis purchased by them, for which price regulation is to be introduced. It is calculated using the formula below:

$$B\Pi = \sum_{i=1}^n [(P_i \text{ факт} - P_i \text{ пер}) * V_i \text{ факт}],$$

where:

C_b - consumer benefits from the introduction of price regulation on average for one year of the established analysis period, in thousands of tenge;

Pi fact - the average annual price (wholesale or retail) of the sale of a unit of the product under analysis of the i-th market entity formed within the analysis time period, in tenge;

Pi reg - the price of a unit of the product under analysis for the i-th market entity, which is determined in accordance with paragraph 21 of the Pricing Rules in socially significant markets, approved by order №36 of the Minister of National Economy of the Republic of Kazakhstan as of February 1, 2017 (registered in the Register of state registration of regulatory legal acts as № 14778), in tenge;

Vi fact - the volume of sales of a product under analysis of the i-th relevant product market entity, formed as a result of the time period under analysis, in thousands of units;

n - the number of entities of the product market analyzed for the purpose of being classified as socially significant.

17. Direct costs of an entity from the introduction of regulation expressed in in monetary terms are calculated using the formula below:

$$Зрег\ прям = \sum_{i=1}^n (КЧi * ЗПи),$$

where:

direct Creg - direct costs of an entity from the introduction of regulation, in tenge;

MHi - the number of man-hours spent by the i-th entity per year on the formation and submission of the required information to the department of the authorized body;

Si - the salary of employees per hour of the i-th entity, whose functions include interaction with the department of the authorized body.

An employee salary per hour () is calculated using the formula below:

$$ЗПи = ЗПиср/Чи,$$

where:

Mi - the number of man-hours per month of the i-th entity;

Siav - the average monthly salary of employees of the i-th entity involved in the formation and submission of information to the department of the authorized body required by the rules for information regulation.

If entities do not disclose the average monthly salary of employees, then it is necessary to use for calculations information from the data of the authorized body for statistics on the average salary in an industry, in which the entities under analysis operate, as well as the average monthly working time calculated in accordance with Article 68 of the Labor Code of the Republic of Kazakhstan as of November 23, 2015.

Indirect costs of entities from the introduction of regulation include lost profits from price reductions and lost investments (in case of absence of regulation, entities can continue to keep up the current level of profitability and invest part of their profits in development). The department of the authorized body determines indirect costs for each entity on a case-by-case basis, as the amount of lost profitability, in the amount of actual profitability from consumers' gain, and investment lost in the amount of 6% of the sales volume of the product (gross revenue), using the formula below:

$$Z_{\text{рег косв}} = \sum_{i=1}^n (R_i \text{ факт} * V_{\text{п}} + 0,06 * V_{\text{ист}}),$$

where:

$Z_{\text{рег ind}}$ – the entity's indirect costs from the introduction of regulation;

$R_{\text{ифакт}}$ - the actual level of profitability of the i-th entity for the period (year) under analysis;

$V_{\text{ива}}$ - sales volume of a product under analysis of the i-th entity in a relevant product market in terms of value, formed on the basis of the results of the period under analysis, in thousand tenge.

18. In case of introduction of regulation, the losses of the national budget of the country owing to short-received amounts of corporate income tax due to a reduction in the price for goods analyzed by an entity (entities) is calculated using the formula below:

$$P_{\text{рб}} = \sum_{i=1}^n [(P_i \text{ факт} - P_i \text{ рег}) * V_{\text{ист}} - Z_i \text{ рег прям}] * K_{\text{ПН}},$$

where:

$L_{\text{нб}}$ - losses of the national budget, in thousand tenge;

$V_{\text{ивр}}$ - sales volume of a product under analysis of the i-th entity in a relevant product market, formed on the basis of the results of a period of analysis, in thousand tenge.

CIT - the corporate income tax rate, in accordance with the tax legislation of the Republic of Kazakhstan.

If in case of introduction of price regulation, the department of the authorized body does not expect a price reduction (a price is fixed at its current level), then this indicator is not calculated.

19. The net benefits of consumers (hereinafter referred to as the NB) from the introduction of price regulation are calculated using the formula below:

$$ЧВ = V_{\text{п}} - (Z_{\text{рег прям}} + Z_{\text{рег косв}} + P_{\text{рб}}).$$

If the NB is less than or equal to zero, the department of the authorized body draws up an opinion about inappropriateness of classifying a market under analysis as socially significant.

If the NB is greater than zero, the department of the authorized body draws up an opinion about appropriateness of classifying a market under analysis as socially significant.

Chapter 4. Drawing up an opinion about the analysis results

20. Pursuant to the analysis results, the department of the authorized body draws up an opinion about:

- 1) usefulness/uselessness of state regulation of prices for goods (works, services) of socially significant market entities, specified in paragraph 1 of Article 124-5 of the Code, after the expiry of periods of state regulation of prices established in accordance with the legislation of the Republic of Kazakhstan;
- 2) appropriateness/inappropriateness of classifying the market under as socially significant and introducing state regulation of prices for goods (works, services).

The opinion is posted on the Internet site of the department of the authorized body and sent to the Applicant within 5 working days of its signing by the head of the department of the authorized body (in case of submission of the Application).

In case of drawing up an opinion about usefulness of continuing state regulation of prices for goods (works, services) of socially significant market entities or appropriateness of classifying a market under analysis as socially significant, within 5 working days of its placement on the Internet resource, the Government of the Republic of Kazakhstan receives a proposal on:

- 1) the usefulness of state regulation of prices for goods (works, services) of socially significant market entities, specified in paragraph 1 of Article 124-5 of the Code, after the expiry of periods of state regulation of prices established in accordance with the legislation of the Republic of Kazakhstan;
- 2) appropriateness of classifying a market under analysis as socially significant and introducing state regulation of prices for goods (work, services).

Appendix 1 to
the Methodology for
analyzing socially significant markets
Form

Evaluation of entry barriers to a product market or a socially significant market under analysis to new entities

Product under analysis _____
Market characteristics – wholesale or retail _____
Points of barriers: present – 0,2 points, absent – 0 points

Lines	Barriers	Points

1	The need to make initial capital investments with a period of payback of these investments of over 5 years	
2	The need to make sunk costs that cannot be recovered in case of market exit	
3	The degree of development of market infrastructure (transport limitations, restriction of access to service, information, consulting, leasing ones)	
4	Difficult access for new entities to resources, the supply of which is limited and which are distributed among the market entities operating in a market under analysis	
5	Advantages of entities operating in a market under analysis over new entities in terms of costs per production unit, demand for goods of the Product under analysis, availability of long-term contracts with consumers	
6	Technological constraints that imply technological superiority of entities already operating in the product market	
7	The presence of technical and technological constraints to enter the market under analysis to new entities (lack of free radio frequencies, closure of technological chains, availability of railway lines)	
8	The need to create an economically feasible minimum volume of production, which causes for new entities higher costs per production unit until such production volume is achieved (scale effect)	
9	Availability of vertically integrated entities in a market under analysis	
10	The presence of affiliated entities in related markets	
11	Availability of regulatory restrictions on a market under analysis (regulated prices, voluntary or mandatory standards, licensing of certain types of activities, restrictions on the import and export of a Product under analysis)	
12	Provision by state bodies to entities operating in a market under analysis of privileges or other advantages giving them a privileged position compared to their competitors	
13	Regulation of current economic activity of the entities of a market under analysis (sanctions for violation of the established rules, coordination of decisions made with regulatory organizations, quantitative restrictions on the scope of the entities' activity)	
14	Establishment of environmental restrictions (restrictions and prohibitions of economic and other activities that adversely affect the environment and public health, contained in the Environmental Code of the Republic of Kazakhstan as of January 9, 2007)	
15	The production of a Product under analysis in terms of technology is inextricably linked with obtaining access to the services of a natural monopoly	
	Summary evaluation of barriers (the sum of the final assessments by type of barriers - economic, technological, administrative barriers and other restrictions to new entities on the entrance to a market under analysis)	

Note:

If the total of points is within the range of 1.8 - 3.0 points, it means that the product market under analysis has barriers to entry for new market entities, if it is less than 1.8 points, it means that the barriers are either surmountable or absent.

Appendix 2 to the
methodology for
analyzing socially
significant markets

Form

Application for analysis of classifying a market as socially significant

To the Chairman of the Committee

on regulation of natural monopolies, protection of competition and consumer rights of the Ministry of National Economy of the Republic of Kazakhstan/the Head of the Department of the Committee on regulation of natural monopolies, protection of competition and consumer rights of the Ministry of National Economy of the Republic of Kazakhstan in

(indicate your region)

Last and first names, patronymic (if any)

In order to implement paragraph 1 of Article 124-6 of the Entrepreneurial Code of the Republic of Kazakhstan

(full name of the individual / legal entity / state body)

(legal address, business address, phone number, email address)

asks for your looking into the possibility of classifying the product market as socially significant

(name of the product market / socially significant market, the market entities, the last and first

names, patronymic (if any) of officials, location of the market entities)

based on: _____

(the list of all the reasons for classifying the product market as socially significant)

The applicant's data on the product market entities are appended to the letter.

(appendix)

the Head signature last and first names, patronymic (if any)

(his/her representative)

of the legal entity/state body

Letter date

prepared by _____ the last and first names, patronymic (if any)

Phone number

Email address

Appendix to
the Application for
analysis of classifying the market
as socially significant

1. Information on the activity of the market entity (market entities):

(type of goods (works, services) of the product market, which is proposed to be classified as socially significant; type of market in which the entity (entities) operates (operate) (wholesale or retail); the effect of goods on consumers; other information important for this letter's consideration from the point of view of the entity or the state body)

2. Information on the market entities and their officials (the latter – to the best of knowledge):

(names of market entities, last and first names, patronymic of officials, location of their points of sale/purchase)

3. Circumstances underlying the application to the authorized body overseeing natural monopolies (as detailed as possible):

(movement in volumes of production/sales of goods (works, services), movement in prices for them over the past five years, the record of profits from them and other circumstances of the application)

4. Effects of classifying the product market as socially significant for the legal entity/consumer/competitive situation in the market:

(increased efficiency in making pricing decisions of the entity, reduction of time and cost of presenting deliverables, the competition development, reduction of the consumer expenditures for purchasing goods or services, other effects)

5. Any additional information that, in the opinion of the applicant, is important for making a positive decision on this application.

(reduction of sales volumes of the product under analysis, increase in prices due to their regulation, the emergence of new entities in the socially significant market, the restraint of technological modernization, etc.)

6. The list of attached documents, indirectly or directly indicating the appropriateness of classifying the product market as socially significant. If it is not possible to produce documents - indicate the person or body that can provide them:

Measuring of individual signs of socially significant markets

1. The calculation of the price elasticity of demand in the market under analysis

If a decrease (increase) in price leads to an increase (reduction) in (of) demand, this demand is considered to be elastic. If a change in price in either direction does not lead to a change in the demand level, or such a change is insignificant, this demand is considered to be inelastic.

Price elasticity of demand (E) is a criterion for assessing the level of market concentration. If $E > 1$, the demand is considered elastic, which indicates a low concentration of the market and the absence of the need to regulate it. If $E < 1$, the demand is inelastic, the market concentration is high and there is a need to introduce market regulation.

The degree of consumers' sensitivity to price changes is measured using the coefficient of price elasticity of demand, which is the ratio of changes in sales volume to price changes that caused this change in sales volume:

where:

$$E = \frac{\Delta Q}{\Delta P},$$

ΔQ

– percentage change in sales of goods;

ΔP

– percentage change in the price of goods.

While:

$$\Delta Q = \frac{Q_2 - Q_1}{Q_1} \times 100\%,$$

$$\Delta P = \frac{P_2 - P_1}{P_1} \times 100\%,$$

where:

Q_2

– the volume of sales of goods in the reporting period;

Q_1

– the volume of sales of goods in the base period;

P_2

– the price of the goods in the reporting period;

P_1

– the price of the goods in the base period.

To calculate the elasticity of demand in a particular product market, the authorized body determines the period for which the indicators will be calculated, and depending on the frequency of changes in the price of the goods, the settlement period may be a quarter, half a year, a year.

The table below shows the input data required for the calculation of elasticity.

Name of entity	Sale price of goods to the consumer, in tenge		Volume of sales of goods, in physical terms	
	Period 1	Period 2	Period 1	Period 2
A	100	110	102	111
B	95	103	115	123
C	103	112	107	114
Д	98	107	113	110

In order to calculate the elasticity of demand for product “A”, the department of the authorized body performs the following actions:

1) calculates the total volume of sales of product “A” for period 1 and period 2:

Q_2

= 458 units,

Q_1

= 437 units;

2) calculates the percentage change in sales for a year:

$$\Delta Q = \frac{458 - 437}{437} \times 100\% = 4,8\% ;$$

3) in order to calculate the percentage change in prices for product “A”, the department of the authorized body calculates the weighted average sales price of product “A” for the years 2015 and 2016. Depending on the contribution of the sales volume of each entity to the total sales volume of product “A”, weights are calculated for each entity. Thus, the weighted average sales price of product “A” for the year 2016 amounted to

P_2

= 99 tenge, for the year 2015

P_1

= 108 tenge. As a result, the percentage change in the weighted average price was:

$$\Delta P = \frac{108 - 99}{99} \times 100\% = 9,1\% ;$$

4) the coefficient of the price elasticity of demand is calculated for product “A”:

$$E = \frac{\Delta Q}{\Delta P} = \frac{4,8}{9,1} = 0,52 < 1.$$

Based on the results obtained, product “A” is characterized by low price elasticity of demand, which is a criterion for introducing regulation of the product market.

In order to calculate the price elasticity of demand, the authorized body sends the form below to the entities of the product market under analysis.

The form to fill in:

№	Name of the entity	Sale price of goods, in tenge			Volume of sales of goods, in physical terms		
		Period 1	Period 2	Period n	Period 1	Period 2	Period n
1							
2							

2. The calculation of the price index for a product under analysis

To calculate the price index for a product under analysis, it is proposed to use the Laspeyres index. This index shows how the prices for the product under analysis, sold in the base period, have changed. When calculating the index, the cost of the products, sold in the

past period, but in the prices of the current period, is compared in relation to the same quantity of products, but in the prices of the previous period. The formula for calculating the Laspeyres index is as follows:

$$I_p = \frac{\sum p_1 q_0}{\sum p_0 q_0}$$

where:

$$I = (Q_1 - Q_0) / Q_0 * 100\%$$

p1 – reporting period prices;

p0 – base period prices;

q0 – quantity of goods sold in the base period.

3. The calculation of the growth rate of sales of the product under analysis

where:

Q_1

– sales volume in the current period (at the end of the period under analysis) of the product under analysis, in physical terms;

Q_0

– sales volume of the previous (base) period (at the beginning of the period under analysis) of the product under analysis, in physical terms.