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THREE-SCENARIO FORECAST OF RETAIL E-COMMERCE MARKET VOLUME CHANGES IN KAZAKHSTAN UNTIL 2026

Abstract

The new stage of global development is characterized by the movement of data across national borders, which is changing the nature and patterns of commerce. Despite the existence of e-commerce for many years, the current scale of these transactions is not commensurate with the previous ones. In addition, the emergence of marketplaces has fundamentally changed the rules of the game, causing a transformation of commerce processes. The purpose of the research is to compile a forecast model of changes in the volume of Kazakhstan's retail e-commerce market in the optimistic, pessimistic and baseline scenarios. Forecast models were formed as a result of correlation and multiple regression analysis. Scenario forecasts were built taking into account changes in the volume of retail trade in the country based on current conditions of the economy functioning. The results of the study allowed to identify factors that positively and negatively affect the development of the retail e-commerce market in Kazakhstan. The first group includes the growth of the total volume of retail trade, the share of Internet users aged 16–74, the share of non-cash payments in the total structure of payments, and the second group includes the growth of cash payments. The scientific significance of the obtained results lies in the justification of the influence of a set of factors on the change in the volume of the retail e-commerce market. The obtained results can be used by authorized bodies to regulate the market under study by influencing individual factors of e-commerce development.

Key words: e-commerce, three-scenario forecast, correlation analysis, multiple regression model, non-cash payments, Internet prevalence, digital literacy.

Introduction

At present, e-commerce continues to grow rapidly and play a key role in the modern economy. By 2023, global e-commerce turnover is projected to reach $6 trillion, accounting for 22% of total retail sales worldwide. Such a strong growth of e-commerce is facilitated by an even greater online change-over of customers, the development of multichannel sales and personalized offers, as well as the spread of customer-centric models. According to KPMG analysts, Kazakhstan is the leader in e-commerce development in the Central Asian region. Kazakhstan is indeed showing impressive growth in e-commerce: the share of e-commerce in total retail sales of 10% is a significant indicator reflecting the rapid development of online commerce in the country [1]. Such indicators shows a significant interest on the part of consumers in online shopping, as well as trust in electronic payment systems and the convenience of online commerce. Such trends can stimulate the development of e-commerce infrastructure, the introduction of new technologies and the creation of a favorable environment for the development of online business in the country.

This is an important achievement for Kazakhstan, as e-commerce has the potential to become a key driver of economic development, contributing to business growth, job growth and consumer satisfaction. Given its youth and immaturity, the retail e-commerce market in Kazakhstan needs adequate regulation and support from the government. Support from the government requires determining the factors that may affect the development of the market under study, with the justification and indication of measurable features, as well as the development of tools for forecasting the growth of market volumes. In this context, the research is relevant and up-to-date.

Main provisions

It should be noted that the task of the state in creating conditions for the development of any institution is to systematically influence precisely those levers and factors that will positively affect the development of the target institution. This postulate served as the main idea of the present research. In the above context, e-commerce serves as the target institution, and the levers and factors are those institutions, factors, conditions without which e-commerce would not exist at all. For e-commerce transaction, firstly, it needs internet with good speed, and an online store from which consumers will select and order goods. Second, it needs a developed system of cashless payments, such as online, mobile or other bank card payments. Thirdly, a developed delivery and logistics network is needed. Finally, the level of digital skills possessed by the population is important. It follows that in a country where high-speed internet operation among the population is high, cashless forms of payment are developed, the population knows how to take advantage of digitalization, and delivery services work smoothly, e-commerce will develop more dynamically.

This research relies on the above judgments and literature review to identify the factors and its measurable indicators in order to use them to develop a predictive model of changes in the volume of Kazakhstan's retail e-commerce market in different scenarios through the use of econometric research methods.

Literature review

Of primary importance for achieving the purpose of this paper are the studies that directly address the factors and conditions of e-commerce formation. A review of existing literature in this area shows that most studies focus on technical factors such as information system, cybersecurity, marketing and business models [2]. A wide set of factors affecting the development of retail e-commerce were examined in the work of Ibrahim O. et al. According to their research, physical access to ICT, human resource development, and political and regulatory environment together explain 70% of the variation in B2C e-commerce adoption [3]. Ahlualia P. et al. investigated not only the political factors of e-commerce but also the causal relationships between technological, institutional, and cultural factors to explain the differences in adoption rates across countries [4].

The impact of Internet prevalence among users on the development of e-commerce has already been confirmed by the empirical study of Ch.Ho et al. [5, 6]. Another group of scholars points to the level of broadband penetration as one of the factors that best explain different levels of e-commerce adoption and development [7].

The payment environment serves as the most important condition for the existence of e-commerce. In a network economy, the competitiveness of its subjects is determined by the level of development and mutual integration of trade and payment instruments. For effective commercial activity it is necessary for banking institutions and payment systems to be able to process transactions in real time, both domestically and using foreign currencies in the world markets [8]. Currently, payment systems and instruments are developing in this very direction.

Practice shows that along with bank cards, electronic/mobile money and e-wallets are increasingly used in developed countries. According to a number of researchers, the prevalence of bank cards is the main factor in e-commerce [9, 10]. More important than bank card penetration is that consumers have a bank account that would allow them to make electronic bank transfers and card payments or use mobile money services [11].

For Kazakhstani researchers, the topic of e-commerce is a relatively new direction. Some legal and marketing aspects of e-commerce development were considered in the works of M. Zhumadilov, M.K. Zhusupbekov [12]. General trends and prospects of e-commerce development were studied in the works of S.S. Ydyrys, R.I. Ermankulov, Sh. Bulent [13].

PwC Kazakhstan Agency together with the Digital Kazakhstan Association annually conduct a study of the retail e-commerce market based on a survey of the main major market players, and present a short-term forecast [14]. Analysis of the last three research reports shows a significant discrepancies of their forecast data on the market volume from the official data of the Bureau of National Statistics of the Agency for Strategic Planning and Reforms of the Republic of Kazakhstan. In our opinion, these discrepancies are due to two reasons: the subjectivity of the survey results, as well as the fact that survey respondents use mixed models of e-commerce, for example, the company “Mechta” sells its goods both in traditional stores and through its own online store, as well as through the kaspi.kz marketplace. This means that the data provided by “Mechta” may be partially duplicated by data from the kaspi.kz marketplace.

Thus, so far the degree of research in this area, taking into account the Kazakhstan specifics, is extremely low. Therefore, it is advisable to further study the factors of e-commerce development with a focus on the search for new approaches and methods of forecasting the development of the e-commerce market in Kazakhstan.

Materials and methods

The development of forecast models of changes in the volume of the retail e-commerce market was carried out through the application of econometric and statistical forecasting methods based on correlation and regression analysis.

Despite the existence of a large number of influencing factors and indicators on the growth volume of the retail e-commerce market, there are no statistical data on them for the required number of time periods for building a regression model, except for the indicators of education level and Internet prevalence. A review of statistical data that may affect retail e-commerce volume identified several indicators for which data are available since 2010. Table 1 (p. 203) presents the values of these indicators for the years 2010–2021.

In order to compile a multiple regression equation explaining the influence of factors on the volume of retail e-commerce, we use the method of correlation analysis to select the indicators (variables) that most significantly affect the volume of the retail e-commerce market and exclude from the model the minor indicators. Using the MS Excel analysis package, we calculate pair correlation coefficients (table 2. p. 203).

Table 1 – Initial data for correlation analysis

Years	Retail e-commerce market volume, million tenge (У)	GDP per capita, million tenge. (X1)	Volume of retail cash payments, million tenge (X2)	Total volume of retail trade, million tenge (X3)	Share of Internet users aged 16-74 years, % (X4)	Consumer Price Index (X5)	Share of retail non-cash payments in the total structure of payments by individuals, % (X6)	Gross enrollment in higher education (X7)
1	2	3	4	5	6	7	8	9
2010	31971	1,337	2 935 089	3 197 147,8	31,6	107,1	12,3	49,50
2011	38 658	1,706	3 762 967	3 865 840,6	49,5	108,3	13,4	53,14
2012	45 677	1,847	4 793 145	4 567 661,2	67,9	105,1	12,52	53,39
2013	99 302	2,113	5 615 529	5 474 274,0	67,6	105,8	13,56	50,90
2014	114 751	2,295	6 745 721	6 332 253,0	68,1	106,7	12,8	48,37
2015	90 076	2,330	7 244 164	6 555 820,9	77,2	106,6	12,5	48,44
2016	158 699	2,640	8 797 884	7 974 442,1	80,2	114,6	15,60	51,14
2017	177 274	3,015	10 737 020	8 892 857,7	81,5	107,4	22,1	54,29
2018	280 729	3,382	13 585 473	10 045 772,3	83,4	106,0	32,00	60,73
2019	327 408	3,756	16 324 577	11 327 580,6	86,6	105,3	46,30	66,98
2020	685 816	3,767	16 620 487	11 729 949,7	89,0	106,8	68,00	64,07
2021	831 912	4,418	20 589 962	13 709 321,6	93,3	108,0	78,00	62,64
Note: Compiled from sources [15].								

Table 2 – Matrix of pair correlation coefficients

Indicators	У	X_1	X_2	X_3	X_4	X_5	X_6	X_7
У	1							
X_1	0,890901	1						
X_2	0,917909	0,993874	1					
X_3	0,892398	0,997708	0,992383	1				
X_4	0,68344	0,880366	0,835271	0,880445	1			
X_5	0,003179	-0,00764	-0,03037	0,031435	0,047253	1		
X_6	0,984024	0,89305	0,928439	0,889614	0,650984	-0,08353	1	
X_7	0,767991	0,838613	0,865821	0,821737	0,624027	-0,22988	0,853868	1
Note: Compiled by the author.								

The analysis of the matrix of pair correlation coefficients shows that most of the factors have a high correlation with the volume of the retail e-commerce market. The indicator X_5 (consumer price index) does not affect Y, therefore it is excluded from the future model. Due to the close inter-factor correlation, X_1 (GDP per capita), X_7 (gross enrollment in higher education) are also excluded from the model. Also from table 2 we see that there is a close correlation between the rest of the factor attributes. From the position of logic, these indicators do not have a direct relationship, so they will not be excluded from the model. The selected indicators are demonstrated in table 3.

Table 3 – Initial data for regression analysis

Years	Retail e-commerce market volume, million tenge (Y)	Volume of retail cash payments, million tenge (X1)	Total retail trade volume, million. (X_3)	Proportion of Internet users aged 16-74 лет, % (X_4)	Share of retail non-cash payments in the total structure of payments by individuals, % (X_6)
2010	31971	2 935 089	3 197 147,8	31,6	12,3
2011	38 658	3 762 967	3 865 840,6	49,5	13,4
2012	45 677	4 793 145	4 567 661,2	67,9	12,52
2013	99 302	5 615 529	5 474 274,0	67,6	13,56
2014	114 751	6 745 721	6 332 253,0	68,1	12,8
2015	90 076	7 244 164	6 555 820,9	77,2	12,5
2016	158 699	8 797 884	7 974 442,1	80,2	15,60
2017	177 274	10 737 020	8 892 857,7	81,5	22,1
2018	280 729	13 585 473	10 045 772,3	83,4	32,00
2019	327 408	16 324 577	11 327 580,6	86,6	46,30
2020	685 816	16 620 487	11 729 949,7	89,0	68,00
2021	831 912	20 589 962	13 709 321,6	93,3	78,00
Note: Compiled according to data from tables 1 and 2.					

Results and discussion

Based on the data in Table 3, we derive regression statistics (table 4).

Table 4 – Regression statistics

Indicator	Meaning
Multiple R (correlation coefficient)	0,99305821
R-squared (coefficient of linear determination)	0,98616461
Normalized R-square (adjusted (adapted, corrected) coefficient of determination)	0,97825867
Standard error	38462,7387
Observations	12
F (Fisher coefficient)	124,7371753
Significance F	1,38671E-06
Note: Compiled by the authors.	

The coefficient of linear determination is more than 0.98, which indicates a very good approximation. To estimate the Fisher's coefficient, let us compare its value with the tabulated one. For this purpose it is necessary to calculate the coefficients K_1 and K_2. Here K_1 is the number of factors, we have 4 of them. K_2 is calculated according to the formula (1):

$$K_2 = m - n - 1 \quad (1)$$

where

m – the number of observations;

n – number of factors.

Thus:

$$к_2 = 12 - 4 - 1 = 7$$

In the Fisher table we find the intersection of column K_1 (4) and row K_2 (7), where the value of Fisher's criterion is indicated: $K_{table} = 4.12$. According to Table 29, the Fisher's coefficient for our equation is 124.7371753. Since $K_f > K_{table}$, our theoretical regression equation corresponds to the sample data and adequately reflects reality.

The regression estimation results are shown in table 5.

Table 5 – Regression assessment results

Regression Estimation	Coefficients	Standard error	t-statistic	P-Value	Lower 95%	Upper 95%
Y- intersection (b_0)	-285462,737	78864,9401	-3,619640572	0,008514265	-471948,6868	-98976,8
Variable X_1, (b_1)	-0,07976725	0,0298654	-2,670891819	0,031958344	-0,1503877	-0,00915
Variable X_2, (b_2)	0,11354106	0,04805417	2,362772201	0,050136404	-8,89988E-05	0,227171
Variable X_3, (b_3)	157,91155	1865,31535	0,084656758	0,93490459	-4252,858364	4568,681
Variable X_4, (b_4)	14529,1395	1882,40149	7,718406311	0,0001145	10077,9673	18980,31
Note: Compiled by the authors.						

If there is a linear relationship between the variables, as in our case, the multiple regression equation is calculated using the following formula (2):

$$\hat{y} = b_0 + b_1 x_1 + b_2 x_2 + b_m x_m \quad (2)$$

Thus, the multiple regression model will look like this:

$$Y = -285462{,}737 - 0{,}07976725X_1 + 0{,}11354106X_2 + \\ +157{,}91155X_3 + 14529{,}1395X_4$$

where

Y – the volume of the retail e-commerce market;

X_1 – volume of retail cash payments, million tenge;

X_2 – total retail trade volume, million tenge;

X_3 – share of Internet users aged 16-74 years, %;

X_4 – share of retail non-cash payments in the overall structure of payments by individuals, %.

The results of the regression equation can be interpreted as follows:

- an increase in the volume of retail cash payments by 1 million tenge contributes to a decrease in the volume of the retail e-commerce market by 79767 tenge (0.07976725 million tenge);
- an increase in the volume of retail trade by 1 million tenge contributes to an increase in the volume of the retail e-commerce market by 113541 tenge (0.11354106 million tenge);
- increase in the share of Internet users aged 16-74 years by 1% contributes to the increase in the volume of the retail e-commerce market by 157.91155 million tenge;
- increase in the share of retail non-cash payments in the total volume of retail payments by 1% contributes to an increase in the volume of the retail e-commerce market by 14529.1395 million tenge.

By substituting the indicators of factor attributes for 2010–2021 in the constructed regression equation, we will calculate the modeled indicators and compare them with the actual indicators of the retail e-commerce market volume (figure 1, p. 206).

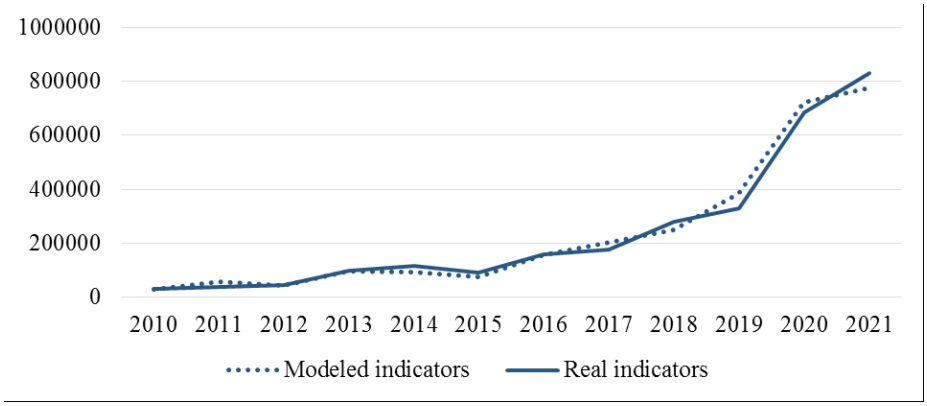

Figure 1 – Comparative analysis of the actual and simulated volume of the retail e-commerce market for 2017–2021

Note: Compiled by the authors.

As can be seen from Figure 1, the modeled retail e-commerce market volume curve is within approximately the same range of change in real volume. This confirms the reliability of the constructed model.

Since the forecast values of factor attributes X_1 and X_2 are absent in industry and nationwide development programs and documents, the method of exponential data smoothing in MS Excel analysis package was used to calculate their forecast values. Since X_3 (share of Internet users) and X_4 (share of retail non-cash payments in the total structure of payments of individuals, %) are measured in percentages, this method is not suitable for forecasting.

In terms of the share of Internet users, Kazakhstan has indicators close to the maximum value. We believe that internet penetration in the coming years will remain at the level of the achieved indicator in 2021, as there are villages in remote regions of the country without internet connection.

As for X4, analysts conclude that the non-cash payment market is close to saturation and will grow at a slower pace. It is expected that once the 85% figure is reached, the figure will grow at a very slow pace. In accordance with this statement, and taking into account the preliminary figure for 2022 – 82%, we assume that the share of cashless payments will grow at an average rate of 1% per year. The calculated values of the factor characteristics are shown in table 6.

Table 6 – Predicted values of factor characteristics of the model

Years	Volume of cash payments	Total retail volume	Share of Internet users aged 16–74 years	Share non-cash payments
2022	21 915 265	14 916 983,1	93,3	82,00
2023	22 995 687	16 406 723,3	93,3	83,00
2024	24 392 355	17 896 463,4	93,3	84,00
2025	26 589 023	19 386 203,6	93,3	85,00
2026	28 185 692	20 875 943,7	93,3	86,00
Note: Compiled by the authors.				

The point forecast Y by regression equation is performed by substituting the values of regressors x^0_1, x^0_2 into the multiple linear regression equation. Thus, the point forecast of Y (Y_{tn}) will have the following form: (figure 2, p. 207).

According to the forecast model, the volume of Kazakhstan's retail e-commerce market in 2026 may reach 1100758.1 million tenge, which is 32.3% more than in 2021. This growth rate over 5 years is not comparable to the previous accelerated growth rates. Figure 3 (p. 207) shows the growth values of the retail e-commerce market by year in relation to the previous year.

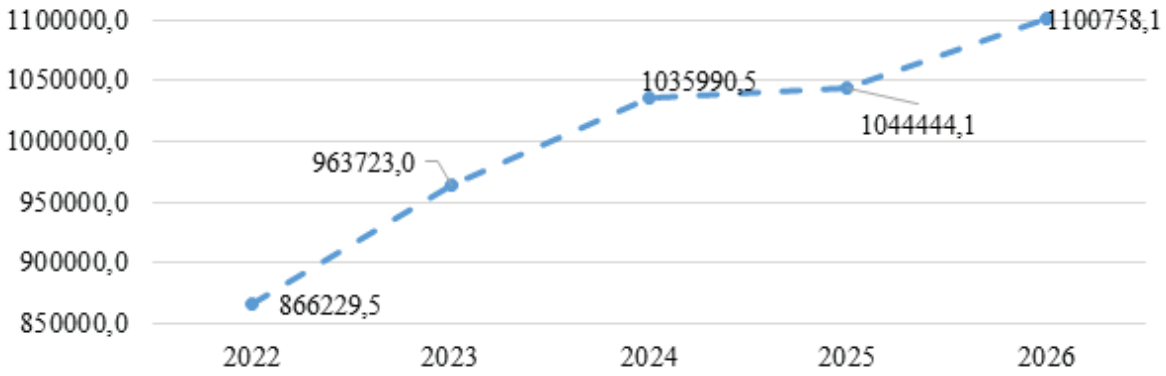

Figure 2 – Point forecast for the growth of the retail e-commerce market in 2022–2026

Note: Compiled by the authors.

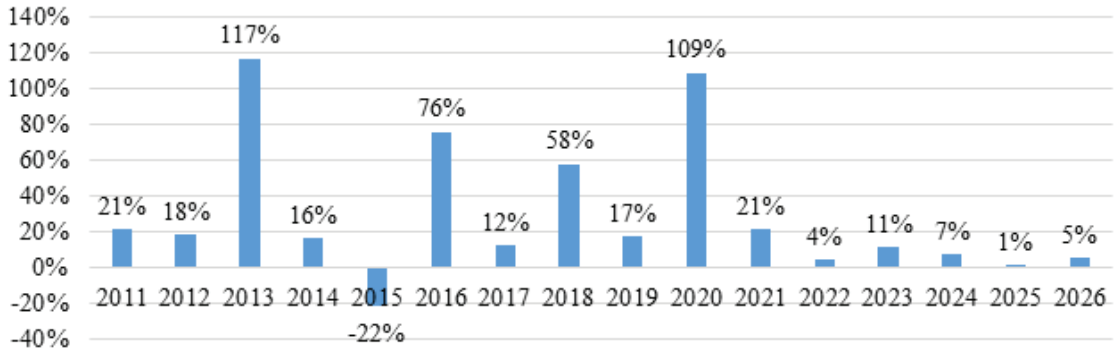

Figure 3 – Comparison of real and forecast growth rates of retail e-commerce market volumes

Note: Compiled and calculated by the authors.

As can be seen from figure 3, a decrease in the volume of the retail e-commerce market was recorded only in 2015 for the entire period under review. In our opinion, this was due to the deterioration of the country's economic development indicators against the backdrop of falling oil prices and the associated devaluation. In general, the growth rate of market volumes has no dynamism, and shows explosive growth in 2013, 2016 and 2020. In 2020, the growth rate relative to 2019 is 109%, helped by pandemic restrictions, and strong penetration of cashless payments. In 2021, the growth rate was not as huge, but was a substantial 21%. According to our forecast model, the growth rate of the retail e-commerce market volume forecasts for 2022–2026 is noticeably slower than that of 2016–2021.

It should be noted that this forecast is a baseline and does not take into account a number of external factors that may affect the socio-economic situation in the country. For example, global output declined in the second quarter of this year due to the recession in China and Russia, and consumer spending in the United States did not meet expectations. The world economy is experiencing a number of shocks: high inflation worldwide leading to tighter financial conditions; economic slowdown in China due to self-isolation measures, as well as additional negative consequences of the war in Ukraine. From this point of view, it is advisable to develop forecast scenarios. The pessimistic scenario can be conditioned by the following circumstances:

1. Increase in the cost of transportation of goods due to higher energy carrier prices, which will lead to higher prices of goods.

2. Decrease in the purchasing power of the population due to the rise in the cost of goods and services. The World Food Organization (FAO) food price index as of May 2022 was 157.4, up 23% from 2021. This will also negatively affect the purchasing power of citizens and their willingness to make purchases. These circumstances combined may limit the growth of retail trade in general.

According to Statista's forecast, the growth rate of the retail market will slow down in many countries in the coming years. A growth rate of just 5% per year could significantly slow down the growth of the retail e-commerce market.

The optimistic scenario assumes stabilization of the global economy as a whole, restrained inflation and increased purchasing power of the population. These circumstances may contribute to the growth of retail trade volumes in the country. Since the median growth for 2010–2021 for this indicator was 10%, this will be taken as the basis for the optimistic scenario. Table 7 presents the forecast values of retail sales volume in Kazakhstan.

Table 7 – Forecast values of factor attribute X_2 for 2022–2026, in 2 scenarios

Years	Factor sign X_2 under a pessimistic scenario (growth of 5%), million tenge	Factor sign X_2 under an optimistic scenario (growth of 10%), million tenge
2022	14394787,68	15902813,06
2023	15114527,06	18447263,14
2024	15870253,42	21398825,25
2025	16663766,09	24822637,29
2026	17496954,39	28794259,25
Note: Compiled and calculated by the authors.		

For all forecast scenarios, the values of indicators X_1, X_3 and X_4 will be the same. This is due to the fact that the growth of the share of Internet users and the share of non-cash payments is already limited, as they are close to the maximum values. The growth of cash payments will continue, but its growth rate over the last 12 years was several times behind the growth rate of non-cash payments. The results are presented in table 8.

Table 8 – Forecast values for the volume of the retail e-commerce market in the Republic of Kazakhstan for 2022–2026

Years	Forecast values of Y under a pessimistic scenario	Forecast values of Y under an optimistic scenario
1	2	3
2022	806938,92	978161,72
2023	817005,70	1195408,09
2024	805932,42	1433652,33
2025	735335,65	1661702,53
2026	717104,04	1999812,01
Note: Compiled and calculated by the authors.		

The findings suggest that if retail e-commerce grows at 5% annually, the retail e-commerce market will fall by 2026, while a growth of 10% annually will lead to market growth. Let's compare scenario forecast models (figure 4).

Thus, according to the forecast models presented in the figure, in 2026, the volume of Kazakhstan's retail e-commerce market under the optimistic scenario may reach almost 2 trillion tenge, under the pessimistic scenario – 717.1 billion tenge, which is less than the actual figure for 2021 (831.9 billion tenge) by 114.8 billion tenge. At the time of publication of this paper, the volume of Kazakhstan's retail e-commerce market for 2022 was known, and amounted to 845.6 billion tenge according to the data of Bureau of National Statistics of the Agency for Strategic Planning and reforms of the Republic of Kazakhstan, while the forecast market volume amounted to 866.2 billion tenge. Since the deviation is insignificant, the developed forecast can be considered adequate.

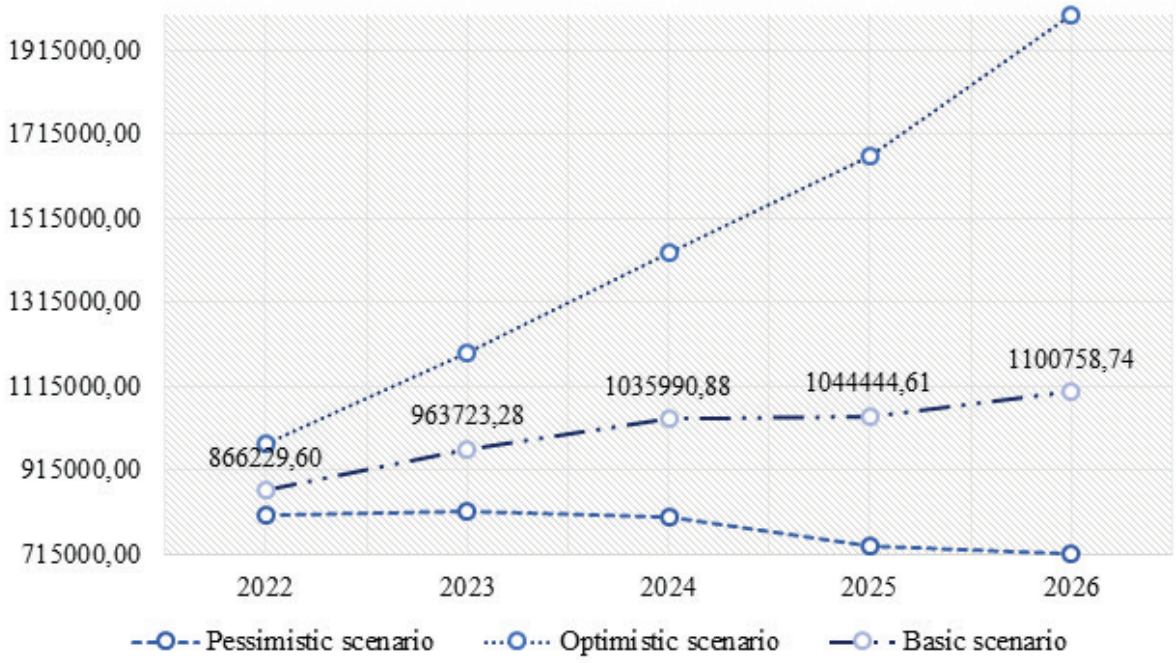

Figure 4 – Scenario forecasts for changes in the volume
of the Kazakhstan retail e-commerce market for 2022–2026

Note: Compiled by the authors.

In order to prevent the realization of the pessimistic scenario of changes in the volume of the retail e-commerce market, it is necessary, first of all, to minimize the risks associated with the deterioration of the global economy and its increasing impact on the national economy as a whole. Risks are primarily related to the deterioration of the purchasing power of the population due to rising prices, which lead to a slowdown in the growth of retail trade volumes in general. In addition, in order to achieve the forecast indicators of the baseline and optimistic scenarios, it is necessary to ensure the growth of the level of Internet penetration, growth of the share of non-cash payments not lower than the set values in this paragraph of the thesis.

Conclusion

Thus, the correlation and regression analysis carried out between various factors that may affect changes in the volume of the retail e-commerce market and the volume of retail e-commerce allowed us to identify 4 significant factors:

1. Volume of retail cash payments. An increase in cash payments by 1 million tenge correlates with a decrease in the volume of the retail e-commerce market by 79767 tenge. This suggests that as more transactions are conducted in cash, there is a negative impact on the e-commerce market.
2. Volume of retail trade. For every increase of 1 million tenge in retail trade, the volume of the retail e-commerce market increases by 113541 tenge. This indicates a positive relationship between traditional retail and e-commerce, implying that growth in one sector tends to boost the other.
3. Share of internet users: A 1% increase in the share of internet users aged 16-74 Years range leads to an increase in the volume of the retail e-commerce market by 157.91155 million tenge. This highlights the significance of internet penetration and its direct correlation with the expansion of the e-commerce market.
4. Share of retail non-cash payments: A 1% increase in non-cash payments within the total retail payments results in an increase in the volume of the retail e-commerce market by 14529.1395 million tenge. This suggests that the ease and convenience of non-cash transactions encourage greater participation in e-commerce activities.

The results obtained confirm the importance of Internet penetration for the development of e-commerce. It is important to improve the Internet infrastructure in all regions of Kazakhstan, creating conditions for competition in the telecommunications services market.

The results also show the positive impact of the growth of non-cash payments, so it is very important to take measures to reduce the share of cash payments in the economy as a whole. Such measures can be developed in two directions: the first is the encouragement of non-cash payments by the population (for example, the return of a certain amount of payments by the tax authority or the support of relevant banking programs), the second is the exclusion or mitigation of punitive rules from the Tax Code in relation to money transfers between individuals.

Based on the obtained regression model, forecast models of changes in the growth of retail e-commerce market volumes up to 2026 were formed in optimistic, pessimistic and baseline scenarios with the estimation of regression parameters.

Scenario models were built taking into account the changes in the volume of retail trade in the country based on the current conditions of the economy functioning. According to the base scenario, in 2026, the volume of the electronic commerce market in the B2C segment will be 1,100,758.1 million tenge, which is 32.3% more than in 2021. Comparison of the real growth rates of the market volume with the forecast ones showed a significant lag in the forecast values, which is due to the influence of negative external factors on the national economy.

The practical significance of the study lies in the possibility of using the developed forecast models when developing a roadmap for the development of the e-commerce market. The modeled forecast in the form of an active MS Excel sheet provides an opportunity to work out various scenarios of changes in the retail e-commerce market volume by entering/changing the above-mentioned factor data.

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ҚАЗАҚСТАНДАҒЫ БӨЛШЕК ЭЛЕКТРОНДЫҚ КОММЕРЦИЯ НАРЫҒЫ КӨЛЕМІНІҢ 2026 Ж. ДЕЙІНГІ ӨЗГЕРІСІНІҢ ҮШ СЦЕНАРИЙЛІК БОЛЖАМЫ

Аңдатпа

Жаһандық дамудың жаңа кезеңі деректердің ұлттық шекарадан асуымен сипатталады, соның нәтижесінде коммерцияның келбеті мен үлгілері өзгереді. Көптеген жылдар бойы электрондық коммерцияның болғанына қарамастан, бұл операциялардың қазіргі ауқымы бұрынғылармен салыстыруға келмейді. Сонымен қатар онлайн платформалардың (маркетплейстердің) пайда болуы коммерцияны жүргізу үдерістерінде трансформацияны тудыратын ойын ережелерін түбегейлі өзгертті. Зерттеудің мақсаты – оптимистік, пессимистік және базалық сценарийлердегі Қазақстандағы бөлшек электрондық коммерция нарығы көлемдеріндегі өзгерістердің болжамдық үлгісін құрастыру. Болжамдық үлгілер корреляциялық және көп регрессиялық талдау нәтижесінде қалыптастырылды. Сценарийлік болжамдар экономиканың ағымдағы жағдайлар негізінде елдегі бөлшек сауда көлемінің өзгеруін ескере отырып құрастырылды. Зерттеу нәтижелері Қазақстандағы бөлшек электрондық коммерция нарығының дамуына оң және теріс әсер ететін факторларды анықтауға мүмкіндік берді. Бірінші топқа бөлшек сауданың жалпы көлемінің өсуі, 16–74 жас аралығындағы интернет пайдаланушылар үлесі, төлемдердің жалпы құрылымындағы қолма-қол ақшасыз төлемдердің үлесі, екіншісіне – қолма-қол ақшалай төлемдер көлемінің өсуі жатқызылды. Алынған нәтижелердің ғылыми маңыздылығы факторлар жиынтығының бөлшек электрондық коммерция нарығы көлемінің өзгеруіне әсерін негіздеуде жатыр. Алынған нәтижелерді уәкілетті органдар жеке факторларға әсер ету арқылы электрондық коммерцияны дамытуда зерттелетін нарықты реттеу үшін пайдалана алады.

Тірек сөздер: электрондық коммерция, үш сценарийлік болжау, корреляциялық талдау, көп регрессиялық үлгі, қолма-қол ақшасыз төлемдер, интернеттің таралуы, цифрлық сауаттылық.

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ТРЕХСЦЕНАРНЫЙ ПРОГНОЗ ИЗМЕНЕНИЯ ОБЪЕМОВ РЫНКА РОЗНИЧНОЙ ЭЛЕКТРОННОЙ КОММЕРЦИИ В КАЗАХСТАНЕ ДО 2026 Г.

Аннотация

Новый этап глобального развития характеризуется перемещением данных через национальные границы, вследствие чего меняются характер, модели коммерции. Несмотря на существование электронной коммерции на протяжении многих лет, нынешние масштабы этих операций несоизмеримы с прежними. Кроме того, появление онлайн- платформ (маркетплейсов) кардинально поменяло правила игры, вызывая преобразование процессов ведения коммерции. Цель исследования заключается в составлении прогнозной модели изменения объемов рынка розничной электронной коммерции Казахстана в оптимистическом, пессимистическом и базовом сценариях. Прогнозные модели были сформированы в результате корреляционного и множественного регрессионного анализа. Сценарные прогнозы были построены с учетом изменения объема розничной торговли в стране исходя из современных условий функционирования экономики. Результаты исследования позволили выявить факторы, позитивно и негативно влияющие на развитие рынка розничной электронной коммерции Казахстана. К первой группе можно отнести рост общего объема розничной торговли, доли пользователей сети Интернет в возрасте 16–74 лет, доли безналичных платежей в общей структуре платежей, ко второй – рост объемов наличных платежей. Научная значимость полученных результатов заключается в обосновании влияния совокупности факторов на изменение объемов рынка розничной электронной коммерции. Полученные результаты могут быть использованы уполномоченными органами для регулирования исследуемого рынка посредством воздействия на отдельные факторы развития электронной коммерции.

Ключевые слова: электронная коммерция, трехсценарный прогноз, корреляционный анализ, модель множественной регрессии, безналичные расчеты, распространенность интернета, цифровая грамотность.