Features of the Tourism Industry Development in the Context of Overcoming the Consequences of COVID-19[*]

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Abstract. The paper examines the trends and prospects for the development of the tourism industry in the context of overcoming the consequences of COVID-19. The pandemic of the new coronavirus infection has hit the tourism industry very hard. The tourist flow decreased by more than half, and incomes fell accordingly. The recovery will very much depend on how the pandemic progresses and on the state of affairs in the economy. The Russian travel industry was not ready for a surge in summer demand from Russian tourists, and a significant increase in prices for quality hotels exposed the problem of their shortage on the market. The program to stimulate domestic tourism is an absolute innovation in promoting regions and certainly an effective tool to stimulate sales in the tourism industry at the country level.

Keywords: Economic Growth; COVID-19, Domestic Tourism.

1 Introduction

The global tourism industry is the third-largest export sector in the world economy after fuels and chemicals, accounting for 7% of global trade in 2019. In January-May 2020 alone, the tourism sector lost almost a third of a trillion dollars. In addition, more than 120 million jobs were at risk.

Every tenth inhabitant of the Earthworks in the field of tourism. It provides livelihoods for hundreds of millions of people not directly involved in it. The importance of tourism can hardly be overestimated because it is not only an important component of the world economy but also allows the inhabitants of the planet to exchange cultural values and brings them together. The pandemic of the new coronavirus infection has

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hit the tourism industry very hard. The tourist flow has more than halved, and revenues have dropped accordingly.

The negative impact of the coronavirus on tourism is a very strong shock even for rich developed countries, but for developing countries and, especially, island states and African countries, the pandemic is a disaster. The pandemic is indeed the biggest shock to the tourism sector in developing countries, with the tourism sector accounting for more than 20% of GDP in some countries.

The tourism industry's export losses in the first five months of this year were $ 320 billion, three times the loss of 2009, which was the peak of the global financial crisis. No country has managed to secure its tourism sector from Covid. According to the UNWTO forecast, for the entire 2020, the global tourism sector may lose from 0.96 to 1.2 trillion dollars. This will lead to a decrease in the GDP of the entire planet by 1.5 - 2.8%. The situation in the tourism sector also affects related sectors of the economy, including food production, which employs 144 million people worldwide. A significant number of them may also lose their jobs. Small tour operators are especially vulnerable to the coronavirus.

Particular attention should be paid to the cultural component of tourism, which is a key means of preserving natural and cultural heritage. Natural tourism accounts for about 7% of the entire tourism sector. Moreover, this segment is developing especially rapidly - up to 3% growth annually. Falling incomes have led to an increase in poaching and environmental destruction around protected areas. The fall in income will also lead to the closure of many UNESCO World Heritage Sites that supply the nearby population [1, 2, 3, 4].

Recovery will largely depend on how the pandemic develops and the state of the economy.

2   Main content.

The travel industry around the world has proven to be the most vulnerable due to the pandemic, border closures, and other quarantine restrictions. In Russia, international transport links have been closed since the end of March. Rostourism has already estimated the industry's losses at one and a half trillion rubles, which is half of its annual turnover, and as a result, the amount may turn out to be even higher. Some companies have suspended their activities, but so far there are no bankrupts among tour operators for some reasons, including thanks to the new tour operator liability insurance system and operational measures of state support.

After a record last year's turnover of 3.7 trillion rubles, the Russian tourism industry has plummeted this year due to the pandemic. According to the head of Rostourism, in just six months, the industry lost 1.5 trillion rubles. Since the industry, whose contribution to the country's GDP is estimated at almost 3.4%, continues to generate losses, losses at the end of the year may be even greater. Travel companies' revenues from inbound and outbound tourism have dropped to almost zero over the past three months. In April and May, there were no domestic sales either [4, 5, 6, 7].

Today, leading tour operators have switched to organizing travel within the country.

In recent weeks, against the backdrop of bans on international flights, this segment of the tourist market began to grow actively: the Russians who stayed locked up after the lifting of restrictions preferred to hastily get out of their cities.

According to the estimates of the Association of Tour Operators of Russia (ATOR), as of March, about 600 thousand unfulfilled obligations of travel companies had accumulated on the market, about 200 thousand more were canceled with a refund to customers. In total, by the beginning of March, the Russians made an advance payment of about 50 billion rubles, some managed to get the money back at the expense of the fund of the industry association "Turpomosch", which does not have enough funds for everyone.

Since the beginning of the year, the turnover for outbound and inbound tours has decreased by 98 percent. Almost everyone now agrees to postpone tours, since the law now allows this to be done instead of a mandatory refund. Some are ready for the fact that they will be paid vouchers, or will wait until the end of 2021 when they can get their money back. We are talking about a law passed in early June that allowed the government to introduce special rules for the return of money by tour operators to clients for canceled tours: if a tourist does not agree to postpone a voucher to a later date, then he can receive his money only next year. At the same time, the tourist should be offered an equivalent tourist product in return.

The Russian tourism industry was not ready for the surge in summer demand from Russian tourists, and a significant increase in prices for quality hotels exposed the problem of their shortage on the market.

The hotel business continues to be in a fever. In the spring, as soon as the pandemic began, hoteliers complained about a sharp drop in demand: the occupancy rate of hotels, hotels, and all kinds of sanatoriums fell to 5-10%, and some facilities were completely closed. In the summer, on the contrary, Russians, tired of the coronavirus and unable to go on vacation abroad, left en masse to rest inside the country. Resort hotels, country, and beach hotels turned out to be in the most advantageous position: in July-August, the occupancy rate of objects in the Krasnodar Territory and Crimea reached 98-100%. The same happened with loading in hotels and tourist centers of the Moscow region, on the banks of rivers and lakes in the European part of the country. To cope with a situation where there was not even enough service personnel, hoteliers have raised prices and even keep them high during the velvet season.

The most vulnerable sectors of the Russian economy are presented in table 1.

Table 1. The most vulnerable sectors of the Russian economy.
Forecast of the dynamics of added value

№	Index, %	2019	2020				
			Q1	Q2	Q3	Q4	year
1	GDP	1,3	1,8	-18,0	-0,9	1,3	-3,8
2	Manufacturing industry	1,6	3,7	-17,5	0,0	2,1	-2,9
3	Building industry	0,4	1,5	-11,2	0,0	5,0	-0,2
4	Wholesale and retail trade	1,7	5,0	-26,1	0,0	3,2	-4,3
5	Transport	2,1	-1,0	-40,2	-2,0	1,0	-10,6
6	Hotels and catering	3,2	0,0	-69,5	-15,0	-5,0	-22,2
7	Healthcare	-2,0	2,0	2,3	2,0	1,5	2,0
8	Culture and sport	1,8	-1,0	-78,9	-10,0	5,0	-21,2

Unlike resort hotels, which managed to earn money during the season, for city hotels the onset of autumn and the peak of business activity will not bring the usual dividends: for urban tourism, autumn is a low season, large-scale business events, which are usually not expected to attract customers to city hotels; borders with most countries are closed, foreigners will come even to large Russian cities only pointwise, and some are even waiting for the second wave of quarantine; the number of business travelers has also declined recently as businesses are accustomed to working remotely. As a result, the occupancy rate of hotels in the coming months may again, like in the spring, fall below the operating payback.

In 2020, something happened in the hotel business that no one expected: consumer demand almost completely stopped. As a result, even taking into account the first two rather successful months of the year and the high summer season, occupancy rates and hotel prices fell on average. In Moscow, in July, the average occupancy rate of urban upscale hotels was 35% against 74% last year, the average selling price for a room was 5700 rubles (in 2019 - 6500 rubles). In St. Petersburg, the average occupancy rate this year is 26% versus 65% last year, and the room rate dropped to 4,800 rubles (in 2019 - 8,200 rubles) [8-15].

In general, higher-end hotels have chosen to raise prices or keep them low because their customers are the least sensitive to prices. This is especially noticeable for the largest international network players, who tried their best to stay in their price niche. At the same time, if the increase in prices for high-class hotels was justified (since they increased revenue and turnover), then this practice did not matter for middle-class hotels, since the number of nonresident customers was limited, and this would immediately lead to an outflow of guests.

The drop in prices was most noticeable in suburban hotels. In connection with the restrictive measures, in just two months of the resort season, from July 1 to September 1, 3,539.1 thousand tourists rested in Crimea. Since the beginning of the holiday season, from July 1 to July 31, 1 million 432.8 tourists have rested in Crimea. During the second

month of the resort season, from 1 to 31 August, 2,106.3 thousand tourists rested in Crimea, which is 15.3% more than in the same period last year.

In August, the number of tourists who left for the peninsula by road on the Crimean bridge increased by 40% to 1,479.1 thousand people compared to the same period last year and amounted to 70.2% in the context of the entire tourist flow. The share of tourists who arrived on the peninsula by air was 25%, by rail - 4.5% and less than 1% - across the state border of the Russian Federation in the sections: Armyansk, Dzhankoy, Perekop.

As of the end of August, 826 accommodation facilities operated in Crimea. During the whole resort summer season, the employees of the Ministry of Resorts and Tourism of the Republic of Kazakhstan conducted consulting raids to monitor compliance with the recommendations of state bodies by hotels and sanatoriums throughout Crimea.

The occupancy rate of hotels on the southern coast of Crimea was 95%. On average in Crimea, the number of rooms filled up to 80%. Good prospects for the fall. Already today, the level of bookings for September-October is 70-80%, which is comparable to the high season.

In October, the second phase of the Affordable Domestic Travel Program will start. The exact start dates for the promotion will be announced later. According to the updated terms of the program, offers from 2 nights will be available for sale, and not from 4 nights as before. At the same time, the minimum cost of 25 thousand rubles, which was valid at the first stage, was abolished. The refund amount will be 20%, but not more than 20 thousand rubles. At the same time, the number of refunds for one card within the program is not limited, and tour packages and hotel offers will be available until January 10, 2021.

The sale of promotional offers will be carried out on the website. In total, the Government of the Russian Federation allocated 15 billion rubles for the program to stimulate domestic travel, prepared by Rosturizm. At the first stage of the Program to stimulate affordable domestic tourist trips, Crimea became one of the most popular destinations. In the Republic of Crimea, during the week of sales, 1,125 vouchers were purchased in 79 Crimean hotels. The most popular were the Yalta-Intourist hotel and the Saki sanatorium. In total, 94 tour operators and 79 Crimean hotels took part in the program [16-18].

The program to stimulate domestic tourism is an absolute innovation in promoting regions and certainly an effective tool to stimulate sales in the tourism industry at the country level. And she certainly has good prospects. Separate software products will appear, individual offers both from accommodation facilities and tour operators and from regions that are interested in tourist flow in those periods that are considered to be low seasons. To minimize losses under conditions of quarantine restrictions, tour operators are switching from outbound tourism to actively growing domestic tourism, which will receive new incentives for development with increasing demand.

To analyze the processes of competition in the tourism sector at the regional level, the well-known mathematical model of Lotka - Volterra, which was originally used to describe the competition of biological species, was used.

Let T_1 – be the number of tourists in the first region and, a T_2 in the second region.

The Lotka-Volterra system of equations describing the dynamics of the number of tourists is given in the space $\{T_1 T_2\}$ and has the form:

$$\begin{cases} \frac{dT_1}{dt} = (a - bT_2)T_1 \\ \frac{dT_2}{dt} = (c - dT_1)T_2 \end{cases} \quad (1)$$

where a and c are coefficients of exponential growth or decline when $(T_1 T_2)$ belongs to the vicinity of point (0,0), b and d are the coefficients of decrease, a and c, respectively, associated with the competition of tourist regions. Stationary states of the system (1) $(\tilde{T}_1 \tilde{T}_2)$ are solutions to the system of algebraic equations:

$$\begin{cases} (a - b\tilde{T}_2)\tilde{T}_1 = 0 \\ (c - d\tilde{T}_1)\tilde{T}_2 = 0 \end{cases} \quad (2)$$

The solutions to system (2) are $(\tilde{T}_1 \tilde{T}_2)_1 = \left(\frac{c}{d}, \frac{a}{b}\right)$ and $(\tilde{T}_1 \tilde{T}_2)_2 = (0,0)$. Of interest is only $(\tilde{T}_1 \tilde{T}_2)_1$ we linearize the system of equations (1) in its neighborhood: Since in its neighborhood:

$$\begin{cases} (a - b\tilde{T}_2)\tilde{T}_1 \approx \frac{bc}{d}(T_2 - \tilde{T}_2) \\ (c - d\tilde{T}_1)\tilde{T}_2 \approx \frac{ad}{b}(T_1 - \tilde{T}_1) \end{cases} \quad (3)$$

then the linearized system (1) will take the form:

$$\begin{cases} \frac{d}{dt}(T_1 - \tilde{T}_1) = -\frac{bc}{d}(T_2 - \tilde{T}_2) \\ \frac{d}{dt}(T_2 - \tilde{T}_2) = -\frac{ad}{b}(T_1 - \tilde{T}_1) \end{cases} \quad (4)$$

Differentiating the right and left sides of the system (4) concerning time t, we obtain a system of equations:

$$\begin{cases} \frac{d^2}{dt^2}(T_1 - \tilde{T}_1) = ac(T_1 - \tilde{T}_1) \\ \frac{d^2}{dt^2}(T_2 - \tilde{T}_2) = ac(T_2 - \tilde{T}_2) \end{cases} \quad (5)$$

If ac> 0, then solution (5) has the form:

$$\begin{cases} T_1(t) = \tilde{T}_1 + (T_1(0) - \tilde{T}_1)e^{\sqrt{act}} \\ T_2(t) = \tilde{T}_2 + (T_2(0) - \tilde{T}_2)e^{\sqrt{act}} \end{cases} \quad (6)$$

That is, in this case (in this model), as a result of competition, the number of tourists

in both regions will grow exponentially and over the period $T = \frac{1}{\sqrt{ac}}$ increase e times.

If ac <0, then you can enter the angular frequency w: ac = $- w^2$ and system (5) will take the form:

$$\begin{cases} \frac{d^2}{dt^2}\left(T_1 - \tilde{T}_1\right) = -w^2(T_1 - \tilde{T}_1) \\ \frac{d^2}{dt^2}\left(T_2 - \tilde{T}_2\right) = -w^2(T_2 - \tilde{T}_2) \end{cases} \quad (7)$$

Solutions (7) are as follows:

$$\begin{cases} T_1(t) = \tilde{T}_1 + A\ coswt \\ T_2(t) = \tilde{T}_2 + B\ sinwt \end{cases} \quad (8)$$

Solutions (7) are as follows:$(T_1 - \tilde{T}_1, T_2 - \tilde{T}_2)$ describes an ellipse of the form::

$$\frac{(T_1 - \tilde{T}_2)^2}{A^2} + \frac{(T_2 - \tilde{T}_2)^2}{B^2} = 1 \quad (9)$$

in the vicinity of the point $\frac{c}{d}, \frac{a}{b}$.

Let P_1 − be the probability that ac <0, and P_2 that ac> 0 then the presence of fluctuating random factors affecting the competitiveness of regions will lead to the fact that P_1 and P_2 will be solutions of a system of differential equations.

$$\frac{dP_1(t) = wP_2(t) - wP_1(t)}{dP_2(t) = wP_1(t) - wP_2(t)} \quad (10)$$

here w is the number of fluctuations from ac <0 to ac> 0.

Since $P_1 + P_1 = 1$, the first equation of system (10) can be transformed:

$$\frac{dP_1}{dt} = w(1 - P_1) - wP_1 = -2w(P_1 - \frac{1}{2}) \quad (11)$$

Hence:

$$\frac{d}{dt}\left(P_1 - \frac{1}{2}\right) = -2w\left(P_1 - \frac{1}{2}\right) \quad (12)$$

Solution (12) has the form:

$$P_1(t) = \frac{1}{2} + \left(P_1(0) - \frac{1}{2}\right)e^{-2wt} \quad (13)$$

$\lim\limits_{t\to\infty} P_1(t) = \frac{1}{2}$, therefore, $\lim\limits_{t\to\infty} P_2(t) = \frac{1}{2}$.

Thus, a system of equations has been built for two competing regions in the tourism

sector. In the vicinity of the point $\frac{c}{d}, \frac{a}{b}$ the system fluctuates passing from behavior (6) to behavior (8) and vice versa. Each of these types of behavior is realized with a probability of $\frac{1}{2}$.

3 Conclusions

The program to stimulate domestic tourism is an absolute innovation in promoting regions and certainly an effective tool to stimulate sales in the tourism industry at the country level. And she certainly has good prospects. Separate software products will appear, individual offers both from accommodation facilities and tour operators and from regions that are interested in tourist flow in those periods that are considered to be low seasons.

To minimize losses under conditions of quarantine restrictions, tour operators are switching from outbound tourism to actively growing domestic tourism, which will receive new incentives for development with increasing demand.

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