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Covid-19 Pandemi Sürecinin Turizm Sektörüne Finansal Etkileri

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ÖZ

Bu çalışma covid-19 pandemi sürecinin turizm işletmelerinin finansal risk, ve getiri oranları üzerine etkisini incelemeyi amaçlamaktadır. Çalışmada covid-19 pandemi sürecinin etkilerini ortaya koymak için Borsa İstanbul Turizm Endeksine kayıtlı işletmelerin 2011-2020 yılları arasındaki finansal risk ve getiri oranları hesaplanmıştır. Bu değişkenlerin pandemi dönemindeki trendleri belirlendikten sonra finansal risk düzeylerinin hisse senedi getiri oranlarına etkisi panel veri analizi ile değerlendirilmiştir.

Çalışmada işletmelerin finansal riskleri Altman z skor modeli ile getiri oranları işletmelerin hisse senedinin yıl sonu borsada işlem gördüğü kapanış fiyatları üzerinden hesaplanmıştır. Hesaplamalarda işletmelerin Kamu Aydınlatma Platformu'nda yayınlanan mali tablo verileri kullanılmıştır.

Anahtar kelimeler: Covid-19, Turizm Sektörü, Finansal Risk, Getiri Oranı,

Financial Effects of Covid-19 Pandemic on BIST Tourism Index

ABSTRACT

This study aims to examine the effect of the Covid-19 pandemic period on financial risk and return rates of tourism businesses. In the study, financial risk and return rates of the businesses registered in the Borsa Istanbul Tourism Index between 2011-2020 were calculated in order to present the effects of the Covid-19 pandemic. After determining the trends of these variables during the pandemic period, the effect of financial risk levels on stock return rates was evaluated with panel data analysis.

In the study, financial risks of the businesses were calculated with the Altman z-score model, and the return rates were calculated over the year-end closing prices of businesses' stocks, which were traded at stock exchange. The financial statement data of businesses published in the Public Disclosure Platform had been used in the calculations.

Keywords: Covid-19, Tourism Sector, Financial Risk, Rate of Return

1. Introduction

The virus named COVID-19 first appeared on December 31, 2019 in Wuhan city of China's Hubei province. The first case was reported in our country on March 11, 2020, simultaneously with the period when COVID-19 was declared a pandemic by the World Health Organization related to the SRAS-Coronavirus factor affecting the whole world. The COVID-19 pandemic, which still maintains its effect as a serious health problem, has also brought along global financial impacts. The evolution and economic effects of this virus, which threatens not only human health but also economies, are still uncertain (McKibbin & Fernando, 2019).

In all economies where the pandemic spreads, the collapse of spending (demand shock), which has emerged in major service sectors, particularly transportation, tourism and trade, is getting deeper and spreading rapidly to all economies. In addition to this, demand shocks will start to cause supply (production) shocks with delay. On top of all this, with the

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financial shocks, real economies are likely to shrink together with supply and demand shocks. (Aydoğuş, 2020).

The coronavirus (COVID-19) outbreak is triggering an unprecedented crisis in the tourism economy, given these sudden and massive shock inflicted on the industry. The revised Organisation for Economic Co-operation and Development (OECD) estimates of the COVID-19 impact point to a 60% decline in international tourism in 2020. This may increase to 80% if recovery is delayed until December. While international tourism in certain geographic regions (for instance the European Union) is expected to recover earlier, domestic tourism, which accounts for about 75% of the tourism economy in OECD countries, is expected to recover faster. It provides an opportunity for improvement in countries, regions and cities, particularly where the industry supports many work and businesses.

As of April 2020, 96% of all world destinations have implemented travel-restricting precautions to prevent the COVID-19 outbreak (UNWTOa, 2020:3). Hence, flights, hotel reservations and festivals have been canceled, along with travel restrictions, and this has greatly affected global tourism.

While the coronavirus epidemic caused the biggest economic crisis of the century on a global scale, tourism is one of the sectors most negatively affected by this process. All the data released regarding the tourism sector clearly reveal the magnitude of the loss experienced.

2. World and Turkey Tourism Under COVID-19

In 2020, when the pandemic emerged and spread rapidly, tourism destinations around the world suffered great losses. According to The United Nations World Tourism Organization (UNWTO) data, tourism in Spain, which is one of the leading competitors of Turkey, regressed 76% in the first 8 months, while 81% regression was experienced in the first 7 months in Greece. While Italy's loss in tourism in the first 7 months of the year was 43%, Croatia, one of the rising destinations in the Mediterranean basin, experienced a 53% loss in the 8-month period. Once again, another significant destination in the Mediterranean Basin, Portugal lost 40% in the 8-month period, while the loss was 82% in Egypt (UNWTO, 2020).

The COVID-19 outbreak has been one of the biggest challenges facing the modern travel industry. According to McKinsey's report, the economic recession caused by the COVID-19 outbreak, travel restrictions, reduction of airline capacity, health and safety precautions including social distance rules have made the sector's mobility almost negligible. It does not seem easy to predict a timeline for when the sector will recover under epidemic conditions, which is an experience that it has never experienced before. According to the scenarios prepared for the effects of the epidemic, it is stated that global tourism will recover by 2023-2024, but that in this recovery, it will not see the 2019 level in terms of tourism expenditures before 2023 (https://www.tursab.org.tr/dunya-turizmi-degerlendirmesi).

When the last 9-year tourism data for Turkey are analyzed, it is seen that the crisis experienced with Russia in 2015 was effective in the regression observed between 2015 and 2016. In 2016, it decreased by 29.7% compared to 2015. In Figure 1, the number of tourists and tourism revenues which Turkey obtained in recent years are shown.

Approximately 80% of Turkish tourism revenues are obtained from foreigners, and 20% from Turkish citizens residing abroad. Compared to 2014, in 2015, along with the decrease in both personal expenditures of foreign tourists, which was 70%, and package tour expenditures of 30%, package tour expenditures decreased significantly by 19.6%.

The number of foreign visitors coming to Turkey in 2019 in the pre-pandemic period was 45 million 58 thousand 286 with an increase of 14.1% compared to the same period of the previous year. When Turkish citizens living abroad are also added to this number, the total number of visitors arriving in Turkey in 2019 rose to 51.7 million people.

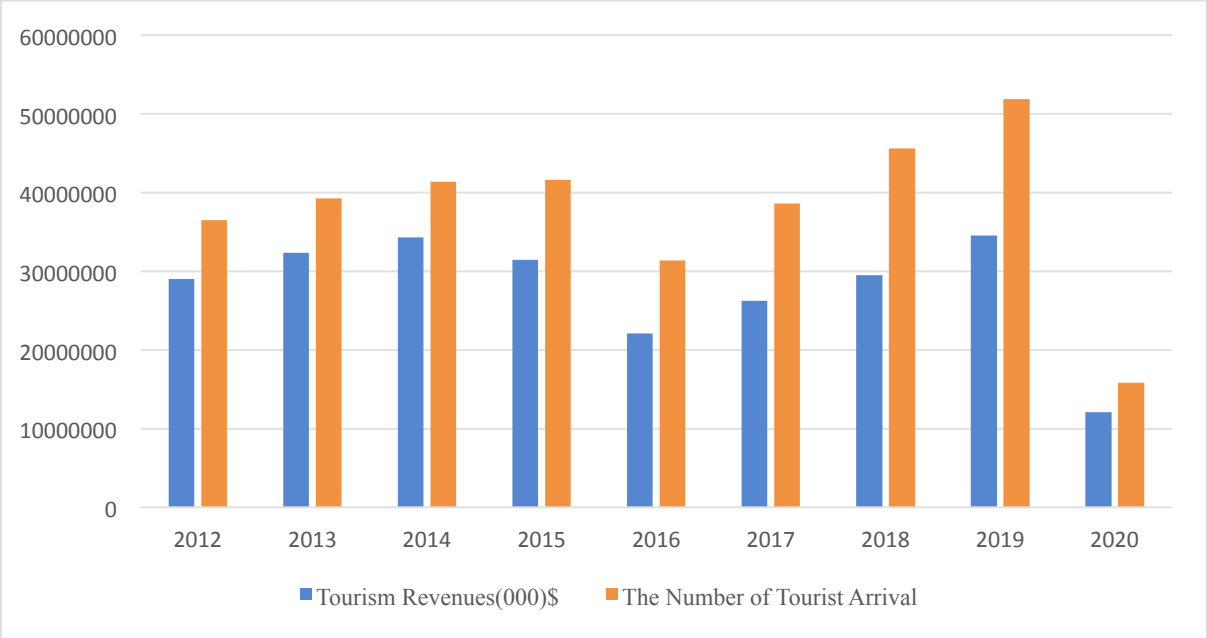

Figure 1: Turkey's Tourism Revenues (USD) and the Number of Tourist Arrivals
Source: https://tuikweb.tuik.gov.tr/PreTablo.do?alt_id=1072

According to the data released by the Turkey Statistical Institute, Turkey's tourism revenues in 2019 was $ 34.5 billion with an increase of 17% compared to the previous year. In 2019, tourism income per capita increased by 3% compared to the previous year and rose from 647 dollars to 666 dollars. Turkey's tourism expenditure in 2019 was 4.4 billion dollars. In this context, Turkey's net tourism income became 30.1 billion dollars in 2019. Turkey's foreign trade deficit in 2019 was 31 billion 174 million dollars; thus, the net input obtained from the tourism sector met 96.6% of foreign trade deficit (https://www.tursab.org.tr/dunya-turizmi-degerlendirmesi).

From an economic point of view, the contribution of tourism to foreign trade balance, labor force employment potential, national income, foreign currency inflow, and the development of touristic regions cannot be denied. It provides easier foreign exchange flow compared to foreign currency particularly provided by exporting goods and services.

Turkey meets its energy needs from abroad; therefore, it needs foreign currency for structurally emerging external deficit. Tourism revenues have a great role in financing the foreign exchange deficits that arise for a variety of reasons.

Tourism sector in Turkey has a significant impact due to the direct and indirect contribution it provides to economic activity. While the services provided by the accommodation, transportation and entertainment sectors contribute directly to the economy, input purchases of these sectors, new investments and government expenditures indirectly affect the economy. The expenditures of the employed labor force in the sector, on the other hand, create an "induced consumption" effect in the economy. According to the calculations of the World Travel and Tourism Council, while the total contribution of the tourism sector to

GDP in 2015 was 12.9%, the total contribution of the sector to employment increased to 8.3%.

The tourism sector is related to many sectors due to its structure. While the tourism sector provides input from 49 sectors, the services provided by this sector are used as inputs by 55 different sectors. Developments in the tourism sector significantly affect the food and beverage sector as well as agriculture and animal husbandry sectors which provide input to this sector. The activities of travel agencies and wholesale and retail trade sectors are also significantly affected by the developments in the sector (https://ekonomi.isbank.com.tr /UserFiles/pdf/sr201606_turizmsektoru.pdf).

The number of foreign visitors coming to Turkey in 2019 in the pre-pandemic period was 45 million 58 thousand 286 with an increase of 14.1% compared to the same period of the previous year. When Turkish citizens living abroad are also added to this number, the total number of visitors arriving in Turkey in 2019 rose to 51.7 million people. However, these numbers declined significantly in 2020, when the pandemic was effective.

2019 was a record year for the highest tourism income. According to the data released by the Turkey Statistical Institute, Turkey's tourism revenues in 2019 was $ 34.5 billion with an increase of 17% compared to the previous year. In 2019, tourism income per capita increased by 3% compared to the previous year and rose from 647 dollars to 666 dollars. Turkey's tourism expenditure in 2019 was 4.4 billion dollars. In this context, Turkey's net tourism income became 30.1 billion dollars in 2019. Turkey's foreign trade deficit in 2019 was 31 billion 174 million dollars; thus, the net input obtained from the tourism sector met 96.6% of the foreign trade deficit.

According to the data released by the Turkey Statistical Institute, in the third quarter of 2020 consisting of July, August and September, it decreased from 14 billion dollars to 4 billion 44 million 356 thousand dollars with a decrease of 71.2% compared to the same quarter of the previous year. According to Turkey Statistical Institute data, in the 9-month period of 2020, the average tourism income per capita obtained from foreign tourists and foreign citizens living abroad was 724 Dollars, and the average tourism income per capita increased by 11.5 percent compared to the same period of 2019. In the January-September period of 2019, our tourism income per capita was 649 dollars (https://www.tursab.org.tr/dunya-turizmi-degerlendirmesi).

3. Literature

Even a slight risk, especially regarding human health or safety (disease, terrorism, etc.), is enough for avoiding a tourist destination (Lee and Chen, 2011). In this context, tourism sector is very quickly affected by negative events, particularly terrorism, war and natural disasters, as well as political and economic instabilities, government crisis, etc. It is known that some terrorist incidents, epidemics and natural disasters, which occurred particularly in recent years, have had negative effects on regional tourism and international tourism movements (Bahar and Kozak, 2008).

The spread of the coronavirus led to stock market crashes, increased financial volatility, declining nominal interest rates, and contractions in real economy activities as reflected in real GDP (Barro et al., 2020: 2). These shocks also caused many economists to express their concerns about the impending global recession (Fetzer et al., 2020: 2).

Examining country-specific risks and systematic risks in financial markets under the COVID-19 outbreak, Zhang et al. (2020) stated that financial markets are displaying a dramatic movement at an unprecedented scale. Research findings revealed that global market risks increased significantly with the pandemic. Stock market responses on country basis have been directly linked to the severity of the epidemic. It is also stated that the economic losses

associated with the pandemic increased the volatility in the markets and caused the markets to become unpredictable. Crisis environments can turn into opportunities for some sectors and institutions. In this pandemic, which has had a negative impact on the world, some sectors have grown above normal in a short time in terms of both sales and assets.

Feng et al. (2020) tried to determine appropriate investment strategies with the philosophy of "thinking ahead of the curve" in order to achieve significant gains in the US stock markets and focused on the sectors that would be most benefited from during this crisis. In this direction, they created scenario analyses by examining the news about the coronavirus rather than using digital data in databases. As a result of their analyses, they determined that companies with more positive news than negative news yielded higher returns and suggested investors to invest in the stocks of a number of companies.

Yan et al. (2020) stated that during epidemic periods, markets reacted very quickly to the epidemic in the short term and declined, but that in the long term, the market recovered itself and rose. In order to make a profit in these markets, they propose to turn to sectors that are rapidly affected by the virus in the short term, and they have argued that investments in travel, entertainment, technology and gold have great return potential.

Tourism has direct, indirect and stimulated effects on the destination economy and society (Khan, Seng and Cheong, 1990). The economic costs and benefits of these effects differ between stakeholders (Mayer, 2014). However, most research focused on evaluating the economic costs and benefits of tourism (Lindberg & Johnson, 1997), and social costs and benefits were discussed only at the conceptual level (Haralambopoulos and Pizam, 1996; Liu and Var, 1986). In addition, researchers investigating the economic impact of tourism have recently begun to analyze the social costs and benefits of tourism for destination communities (Torre & Scarborough, 2017) and environments (Bella, 2018).

The scientific view of tourism and crises is divided into two main groups: risk perception at the individual level (demand side) and crisis management at the collective level (supply side). Tourism-related risks can be terrorism, war, social instability (political or criminal) or health concerns. From a supply perspective, the impact of crises on the destination or on the tourism industry as a whole has been dominant. Research focused on the impact of various crises on tourism demand such as the global financial crisis (2007-2008), the swine flu (H1N1) epidemic (2009) (Page, Song and Wu, 2012), earthquakes, the 9/11 attack on the USA (2001) and other terrorist activities (Seabra, Reis and Abrantes, 2020), the severe acute respiratory syndrome (SARS) epidemic (2003) (Wang, 2009), and tourist boycotts (Yu, McManus, Yen and Li, 2020). Pa x

X ge, Yeoman, Munro, Connell and Walker (2006) examined the effects of the swine flu epidemic on destination planning, considering the risks it posed to the public. Besides, in their recent review, which covers 142 studies published on tourism crisis management, response and recovery strategies, crisis prevention and planning practices, Ritchie and Jiang (2019) identified the lack of comprehensive theoretical and methodological assessments of the effects of crises on the tourism industry.

The 2003 SARS outbreak prompted many researchers to examine the effects and reactions to communicable respiratory diseases (Page et al., 2006). The spread of infectious diseases such as SARS, swine flu and viral hemorrhagic fever (Ebola virus) emerged as the main risk for tourism as it led to bans on international human movements (Ala'a & Albattat, 2019). For instance, a high risk of flu infection was identified among people on voyages, planes, or in tour groups (Freedman & Leder, 2005). The emergence of recent COVID-19 infections on cruise ships in Japan, the USA, Australia and France has also caused many countries to ban cruise ships from docking their ports (Al Jazeera, 2020).

As COVID-19 has now spread to more than 200 countries or regions, unprecedented restrictions have been imposed by the governments of many countries on the movements and behavior of their populations, and economic activity worldwide has drastically decreased. Moreover, the risk of transmission of COVID-19 (MacIntyre, 2020) and other seasonal respiratory diseases through travel in the community is high (Qui et al., 2020: 3).

In this study, in order to determine to what extent the COVID-19 process has affected the financial risks of businesses in the tourism index, the risks of businesses were calculated with the Altman's Z-score risk estimation model. Subsequently, the effect of the obtained financial risk values on the stock prices of the companies was tried to be determined by panel data analysis.

4. Research Method

In this study, the Z scores were calculated by taking the enterprises in the BIST Tourism Index. 10-year balance sheet and income statement data between 2011-2020 of these companies were used, and all financial statement data were taken from BIST and Public Disclosure Platform (PDP). The return rates of the enterprises were calculated over the closing prices. Altman's Z-Score model was used to determine whether the companies in the sector were financially successful or not. Altman's Z-Score model, which is accepted as the basic model in revealing the financial risk ratings of the firms, includes the analysis of the relationships between the five ratios by means of multi discriminant analysis in order to determine the bankruptcy risk of firms, and calculating a combined ratio according to their weights (Aksoy, 1993: 160).

In this model, the Z value on the left side of the equation shows the survival power of the companies, while the variables on the right of the equation represent the ratios and coefficients. The Z value is the sum of the coefficients multiplied by the ratios. The mathematical equation of the Altman's model is as follows (Altman, 1968):

Z = 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + 0.999X5 **(1)**

X1 = Working Capital/Total Assets; **(2)**

X2 = Undistributed Earnings/Total Assets; **(3)**

X3 = EBIT/ Total Assets; **(4)**

X4 = Total Stock Value / Book Value of Liabilities; **(5)**

X5 = Sales/ Total Assets; **(6)**

Since the original Z-Score model is based on a firm's market value, it can only be applied to public companies. Altman (1983) emphasized that the Z-Score model was designed to be open to the public. The interpretation of the model in question is as follows:

• Companies with a Z value less than 1.81 ($Z < 1.81$) have a high risk of bankruptcy.
• Companies with a Z value of $1.81 < Z < 2.99$ are located in the gray area.

• Companies with a Z value more than 2.99 ($Z > 2.99$) have a very low possibility of bankruptcy.

In 1983, Altman revised the first model developed in 1968 and created a new model with different coefficients for private enterprises.

Z=0.717(X1) + 0.847(X2) + 3.107(X3) + 0.420(X4) + 0.998(X5) **(7)**

Critical limits for private businesses are:

• Companies with a Z value less than 1.23 (Z <1.23) have a high risk of bankruptcy.

• Companies with a Z value of 1.23 < Z < 2.99 are located in the gray area.

• Companies with a Z value more than 2.99 (Z > 2.99) have a very low possibility of bankruptcy.

In the next stage of the study, the financial risks of enterprises were calculated according to the Z-score model, and the extent to which they affected their return rates was determined by panel data analysis. The following model was established for panel data analysis.

$$Price_{it} = \beta_{1i} + \beta_2 Z\ Score_{it} + U_{it} \quad \textbf{(8)}$$

Generally, panel data model (Yerdelen Tatoğlu, 2013: 4) can be written as

$$\boldsymbol{Yit = \alpha it + \beta kit\ Xkit + \mu it\ i = 1,\ldots., N;\ t = 1,\ldots., T} \quad \textbf{(9)}$$

Here, ***Y*** is (the dependent variable), ***Xk*** (independent variables), ***α*** constant parameter, ***βk*** slope parameters and ***μit*** is error term.
The subscript i denotes units (such as individuals, firms, countries),
while the subscript t shows the time (such as day, month, year).

5. Findings of the Research

Table 1 shows the closing prices of businesses in the BIST tourism index between 2011 and 2020, during the period in which the annual financial statements are announced. According to the table, it is seen that there is a significant increase in the stock market prices of companies in 2019 and 2020 despite the COVID-19 pandemic process. Likewise, the chart under Table 1 shows the increase in stock prices.

Table 1. Stock Prices of Tourism Enterprises Included in the BIST Tourism Index

Source: (http://finans.mynet.com/borsa/hisseler/)

YEARS / COMPANIES	AYCES	AVTUR	MAALT	MARTI	PKENT	TEKTU	ULAS	UTPYA
2011	7.44	2.57	14.4	0.67	80	0.78	1.4	1.91
2012	7.12	1.46	17.3	0.74	65	0.79	0.61	1.67
2013	3.78	1.45	10.7	0.51	52.75	0.52	0.29	0.94
2014	5.81	1.74	13.8	0.69	75.1	0.62	0.29	1.44
2015	3.65	1.46	10.77	0.52	57	0.5	1.23	1.05
2016	4	2.6	19.1	0.36	44	0.6	0.51	2.22
2017	5.05	1.68	19	0.92	47.48	0.75	0.75	4.49
2018	4.15	1.08	17.5	0.58	68.7	0.83	0.48	4.09
2019	9.99	1.77	66.4	0.89	127.5	1.27	0.96	4.67
2020	49.96	3.2	111.1	2.13	906.4	2.02	4.24	38.8

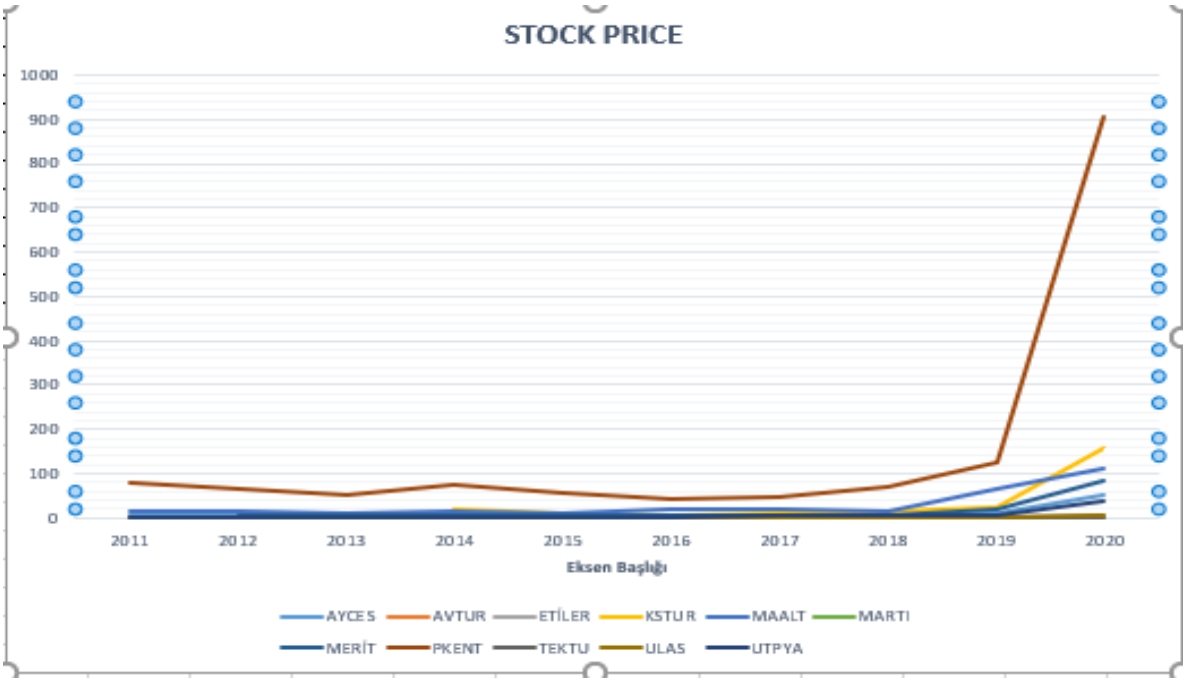

Figure 2. **Stock Price of Tourism Enterprises Included in the BIST Tourism Index by Years**

Table 2. Return Rates of Tourism Enterprises Included in the BIST Tourism Index

YEARS / COMPANIES	AYCES	AVTUR	MAALT	MARTI	PKENT	TEKTU	ULAS	UTPYA
2011	0.588	0.938	0.8889	0.604	0.961	0.696		0.4961
2012	0.957	0.5681	1.2014	1.104	0.813	1.013	0.436	0.8743
2013	0.531	0.9932	0.6185	0.689	0.812	0.658	0.475	0.5629
2014	1.537	1.2	1.2897	1.353	1.424	1.192	1	1.5319
2015	0.628	0.8391	0.7804	0.754	0.759	0.806	4.241	0.7292
2016	1.096	1.7808	1.7734	0.692	0.772	1.2	0.415	2.1143
2017	1.263	0.6462	0.9948	2.556	1.079	1.25	1.471	2.0225
2018	0.822	0.6429	0.9211	0.63	1.447	1.107	0.64	0.9109
2019	2.407	1.6389	3.7943	1.534	1.856	1.53	2	1.1418
2020	5.001	1.8079	1.6732	2.393	7.109	1.591	4.417	8.3084

Table 2, on the other hand, shows the rate of return on stocks compared to the previous period, depending on the annual stock prices of the tourism enterprises. Likewise, the spike in 2019 and 2020, particularly in 2020, is obvious.

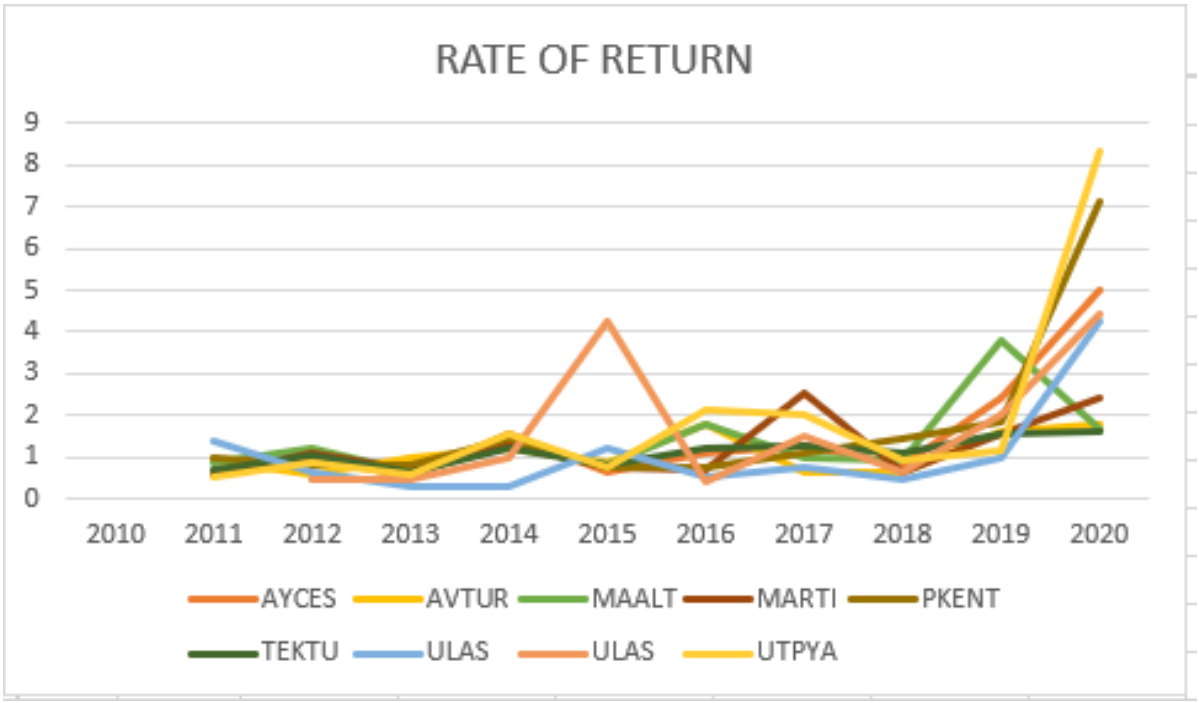

Figure 3. **Stock Return Rates of Tourism Businesses Included in the BIST Tourism Index by Years**

Table 3 shows the Z-scores calculated according to years of 8 tourism businesses in the BIST Tourism index. Accordingly, the increase in Z-scores of businesses in 2019 and 2020 shows that they are moving away from the bankruptcy zone. We can say that other businesses other than TEKTU, MARTI AND UTPYA were positively affected by the COVID-19 pandemic process. This positive development was the result of an excessive increase in the stock prices of businesses in 2019 and 2020. The increase in the market values of businesses has reduced their financial risks.

Table 3. Z-Score Values of Tourism Businesses Included in the BIST Tourism Index

YEARS / COMPANIES	AYCES	AVTUR	MAALT	MARTI	PKENT	TEKTU	ULAS	UTPYA
2011	4.09	14.27	10.07	0.6	3.89	9.14	1.54	0.69
2012	3.7	7.13	10.01	0.21	2.52	3.64	1.65	0.52
2013	1.91	5.38	29.94	-0.07	2.94	1.9	0.01	-0.07
2014	2.65	7.99	37.08	-0.35	2.47	0.85	0.05	0.02
2015	1.42	3.83	14.83	-0.38	2.07	0.59	-0.14	-0.16
2016	0.97	4.45	8.48	-0.54	-0.01	0.14	-0.99	-0.5
2017	0.96	2.49	6.83	-0.67	1.43	0.58	2.2	-0.27
2018	0.89	2.35	1.98	-0.94	2.69	0.37	1.6	-0.55
2019	2.72	4.7	4.3	-0.92	6.41	0.47	1.98	0.07
2020	12.46	8.28	6.51	-1.58	23.82	0.59	15.57	0.88

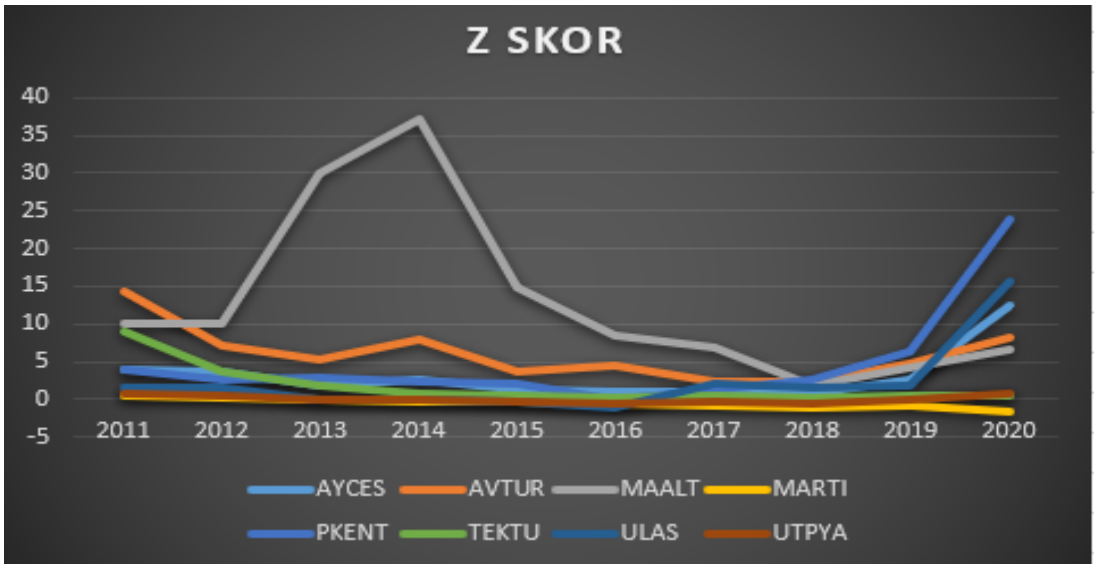

Figure 4. **Z-Score Values of Tourism Businesses Included in the BIST Tourism Index**

Table 4. Panel Data Regression Results

Variables	Coef.	Std. Err.	z- İstatistiği	P Value
cons	-23,337	13,8299	-1,6900	0,092***
RİSK	2,629	1,3132	2,0000	0,045**
Wald chi2	4,01			
Prob. (chi2)	0.0453**			
Number of obs.	72			
Number of groups.	8			
Method	FGLS			

According to Table 4, it appears that there is a statistically significant relationship between Z-scores and stock market prices. The reason for this is that the increase in Z-score values, which express the probability of bankruptcy of companies in 2019 and 2020, reduced the probability of bankruptcy and this was related to the increase in stock prices.

It is observed that other factors besides the financial performance of the companies were also effective in the formation of market prices of stocks. Macro and micro level expectations and the economic conjuncture can often override financial performance in determining stock prices.

6. Conclusion

This study aimed to measure the effects of the developments experienced during the COVID-19 pandemic process on the financial risks of businesses in the Borsa Istanbul (BIST)

tourism index. For this purpose, Altman's Z-scores were calculated by using the financial table data of companies in the tourism sector between 2011-2020. It was investigated to what extent the financial risk was priced in the stock market by calculating the Z values of the tourism companies.

Considering the analysis results, it is seen that the global pandemic crisis and its effects as of the end of 2019 and 2020 generally increased the Z- scores of the companies in the BIST tourism index. Increasing in the Z-score decreases the risk of bankruptcy. While a significant portion of the firms in the sector considered according to the Altman's Z-Score model were quite far from financial risk (bankruptcy risk), it was observed that a few firms had financial risks. On the other hand, a significant increase was observed in the market values of companies in the BIST tourism index due to the increases in stock prices. Panel data analysis revealed a significant relationship between the Z-score and market prices.

On the other hand, the fact that the pricing of stocks is a very complex process, manipulative movements, different financial structures of companies, different trading decisions of investors, differences in expectations, macro and microeconomic developments affect the relationships between bankruptcy probabilities and market prices differently.

This study can be repeated in the future with a larger data set, including other sectors. There are many studies in the literature researching the factors affecting the market price of stocks. It can be researched whether the bankruptcy probability of companies will be one of these factors or not.

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