Evaluation of the Impact of the Covid-19 Pandemic on Consumer Spending in Turkey by Structural Break Analysis

Mehmet Marangoz[1] | *Muğla Sıtkı Koçman University, Muğla, Turkey*
Hatice Hicret Ozkoc[2] | *Muğla Sıtkı Koçman University, Muğla, Turkey*

Abstract

The purpose of this study is to investigate and evaluate the impact of the global Covid-19 crisis on consumer spending tendencies in Turkey. The data of the study, which are weekly data, consists of the "Debit Card and Credit Card Expenditure" amounts of the Central Bank of the Republic of Turkey (CBRT) for the period 6/3/2015–5/8/2022. Changes in consumer expenditures during the Covid-19 pandemic process were examined with the help of structural break tests. The main contribution of this article subsists in an empirical study to examine structural breaks in Turkey using personal debit and credit card disaggregated total expenditure data during the Covid-19 period. According to the research findings; the change observed at the beginning of the Covid-19 period in card expenditures is less than the change observed at the end of the period. With the end of the pandemic, an upward breakout was observed in most of the expenditure items.[3]

INTRODUCTION

World history is full of epidemic events. It is for this reason that societies approach epidemics and diseases with fear. Events leading to diseases and epidemics are recurrent biological events and are completely unpreventable; what matters here is to learn from these epidemics. Thus, the main objective should

[1] Department of Business Administration, Faculty of Economics and Administrative Sciences, Muğla Sıtkı Koçman University, Campus 48100 Muğla, Turkey. E-mail: mehmetmarangoz@mu.edu.tr. ORCID: <https://orcid.org/0000-0002-1589-2940>.

[2] Department of Business Administration, Faculty of Economics and Administrative Sciences, Muğla Sıtkı Koçman University, Campus 48100 Muğla, Turkey. Corresponding author: e-mail: hatice.ozkoc@mu.edu.tr, phone: (+90)2522115103. <https://orcid.org/0000-0003-0037-4603>.

be to be prepared (Donthu and Gustafsson, 2020; Kartal and Şentürk, 2020) and take precautions in case of a reoccurrence of the epidemic.

The novel coronavirus disease, which was first reported to have emerged in Wuhan, China, was first identified on January 7, 2020. Although the city of Wuhan was quarantined, the disease spread rapidly and was declared a pandemic by the World Health Organization on March 12, 2020. The Covid-19 pandemic is an event unprecedented in the last hundred years of human history. The whole world is feeling the effects of this epidemic. According to the Lancet Report (2020), the Covid-19 epidemic, unlike other epidemics, has affected the society both psychologically and physically. The uncertainty in this process has also significantly affected people's consumption behaviour and expenditures (Erdoğan, 2020).

Significant effects on many issues, from health to employment and income of individuals, were caused by the Covid-19 pandemic. In addition to long-term socio-economic effects on countries, it has both short-term macroeconomic and microeconomic impacts. Macroeconomic effects include a decrease in economic activities, an increase in inflation, and an increase in unemployment. Microeconomic effects include the decrease in consumption levels of consumers, job losses, and financial difficulties due to quarantines and restrictions (Cant, 2021). Moreover, all segments of society feel its effects on agricultural food supply chains, which mainly causes the rise in produce prices and an increase in prices in general. In this context, one of the most significant effects of Covid-19 is its effect on consumer behaviour and consumption expenditures.

There have also been significant changes in consumer spending and shopping behaviour since the emergence of Covid-19 in 2019. Overwhelmed by the recent threat of Covid-19, panicked shopping behaviour that led to the depletion of stocks and purchase limits in many food products have been instigated. According to some studies in the literature for the Covid-19 process and after (Chenarides et al., 2021; Jones, 2020; Tekin, 2020; He and Harris, 2020; IPSOS, 2020; Kotler, 2020),[4] it is predicted that some patterns of consumer behaviour will change and be irremediable. For example, Xie et al. (2020) revealed that in the future people's perception of Covid-19 will lead to an increase in organic food consumption and a decrease in game meat consumption. In a study conducted by Coibion et al. (2020), it has been revealed that consumption expenditures for travel and clothing have decreased due to the Covid-19 pandemic. It can therefore be said that the Covid-19 pandemic will significantly affect household consumption patterns (Cant, 2021).

According to James Rickards, author of The New Great Depression, "The pandemic and economic depression that started in 2020 is a turning point. Because our lives will never be the same again. It will take many years for all the effects of this to end, but when it is over, we will not be able to return to those old norms that we are used to" (Sözbilir, 2021). In this context, this study aims to reveal the effects of the Covid-19 outbreak on consumer spending.

In order to achieve this aim, structural breaks in the expenditure series in the weekly data obtained from the Central Bank of the Republic of Turkey (CBRT) were examined, and thus, the periods in which structural changes occurred were determined econometrically. Evaluations of the results were made by looking at the relations between the break dates and the statements about the pandemic previous to these dates. In the following section, previous studies on the subject are mentioned first. Then, the data set used was introduced and the econometric model was mentioned. After reviewing the findings, the conclusions and discussions were included in the last part.

1 LITERATURE REVIEW

After the World Health Organization (WHO) declared the virus a pandemic, many countries imposed travel restrictions, curfews, etc., to reduce the spread of the epidemic. As a result of these measures,

---

[4] <www.mckinsey.com/tr/2021>.

slowdowns have been observed in economic activities around the world (Ateş, 2021). The Covid-19 pandemic has caused both health and economic crises.

One of the most striking consequences of the pandemic is the sudden closure of businesses in some sectors and the resulting reduction in income for certain sectors. Such a development significantly affects the consumption behaviour of individuals. Except for the public service, which continues to provide minimum service due to the curfews in many countries, only the food and health sectors continued their activities (Chikhi, 2021). While the epidemic negatively affects some sectors (industry, domestic and foreign trade, airlines, logistics, tourism, and entertainment), it also affects some sectors (e-commerce, distance education, food, medical products, cleaning materials, mask making, platforms that provide movies and TV series, and communication) positively.

The pandemic has affected the lifestyle and shopping behaviour of consumers due to the curfew (Jribi et al., 2020; Perez-Rodrigo et al., 2020). Lehberger et al. (2021) stated that there was an increase of 126% and 137% in canned fruit and vegetable sales in Germany in March 2020, and the average sales of non-perishable products increased. In a study conducted in China, Wang et al. (2020) determined that after the outbreak of Covid-19, the food stocks of consumers extended from an average of 3.37 days to 7.37 days. Weersink et al. (2020), on the other hand, stated that market sales in Canada increased by 46% in March compared to 2019.

Jo et al. (2020) stated that the sales amount of virtual stores increased significantly during the pandemic process, the interest in technologies supporting health services increased, and there was a growth in technology sales related to online courses in the education sector. Despite these increases, it is stated that the global income of the travel and tourism industry had decreased by 17% in 2020 due to the closure of borders, and international tourist mobility had lost more than 1 billion (Algassim and Abuelhassan, 2021; Anderson et al., 2020).

The desire to "stock up", which was needed in times of war but was forgotten later, re-emerged with the Covid-19 pandemic period, and the purchasing patterns of consumers have changed as well as their purchasing priorities. As a result of some studies, it has been seen that the stocking behaviour of especially non-perishable food and cleaning products has increased in this period (Garbe et al., 2020; Kirk and Rifkin, 2020; Taylor, 2021). The demand for products with a long shelf life and medical products such as disinfectants, masks and gloves has increased, and orders have been placed online with the thought that not many people touch it. In this context, it can be predicted that the Covid-19 pandemic process will affect not only the actual period but also the consumer habits and consumption patterns afterwards (Hacıalioğlu and Sağlam, 2021). In this context, with the Covid-19 epidemic process, the excessive purchase of basic food products such as bread, pasta, the desire to stock up, and the rapid increase in demand for masks, medical supplies, colognes and toilet paper can be seen as a reflection of human survival mechanism on consumption behaviour (Iri, 2021).

On the other hand, the epidemic, increased health expenditures, decreased tax revenues and additional burdens to state budgets through direct income support to the public (Ateş, 2021). Sheth (2020) summarized the changes that occurred in the consumption behaviour of consumers during the pandemic period and classified and explained them as follows: Stocking, Improvisation, Supressed demand, Embracing digital technology, The store is coming home, Uncertainty of work and life boundary, Communication with friends and family, and Talent discovery. Consumers' stocking of products such as toilet paper, bread, water, meat, disinfection and cleaning products causes uncertainty in the product supply of businesses and difficulties arise in their management. For this reason, in addition to the product stocking of consumers, there is also the stocking of products by intermediaries and this causes price increases. Consumers find new ways/tools to consume despite restrictions. Due to this they learn how to improvise. In times of crisis and uncertainty, the general tendency of consumers is to delay the purchase and consumption of optional goods and services. In this respect, there is a suppressed demand. On the other hand, during

the pandemic period, consumers have adopted and used many new technologies and applications absolutely out of necessity. So much so that in this period, since consumers could not go to the market or shopping centres, these stores began to come to homes through jobs and education technology. However, this situation also reveals the uncertainty of the border between work and home. On the other hand, communication with distant friends and family has increased with the use of technology. At the same time, with the time spent at home and becoming more flexible during the pandemic period, consumers have had the opportunity to exhibit and develop their skills.

Studies on the subject are not only conceptual but also empirical studies. When the findings are evaluated as a whole, it was concluded that the Covid-19 epidemic greatly affected and will continue to affect the lifestyles and consumption behaviour of consumers (Wen et al., 2021; Akteri et al., 2021; Eger et al., 2021; Temizkan et al., 2021). In addition, it is stated that it is not possible for the world to get rid of the Covid-19 epidemic in the near future and people should continue the social isolation process (Cox et al., 2020; Bachas et al., 2020; Kissler et al., 2020; Sheth, 2020). These isolation conditions were created deliberately due to the consumer's effort to reduce the risk of disease and caused a social isolation. In this isolated environment, the consumer; preferred online stores, moved faster in the bazaar and market under anxiety and pressure, ordered his favourite food to his home, and planned the holiday he wanted to take under more isolated conditions. All these necessary changes have affected the routine purchasing habits of consumers. While this effect had a negative influence on some sectors (such as tourism, travel and transportation), it also had a positive effect on other sectors (such as technology and food manufacturers) (Howard, 2020; Ota et al., 2020; Tolun and Bulut, 2021; Hacıalioğlu and Sağlam, 2021). Apart from these, Ağan (2020), Koçak (2020), Kantur and Özcan (2021) examined the changes in card expenditures during the Covid-19 epidemic period in Turkey with different econometric techniques. However, the effects of the official decisions taken in these studies on expenditures were not considered. As long as the Covid-19 pandemic process continues, new studies are added to the subject and the subject continues to be investigated with different dimensions (economic, social, cultural).

As it can be understood from the literature review above, a comprehensive study covering the whole territory of Turkey and analysing the changes in the spending tendencies of consumers depending on the official decisions taken regarding the pandemic by using secondary data has not been conducted yet. This study was conducted by using the CBRT data to cover the whole of Turkey, and since it is the first in this regard, it will be an original study and it is understood that it will make an important contribution to the literature.

In unexpected situations, that is, during crisis periods, the demand for shopping is not stable and fluctuations can be very high. Identification of causes of these fluctuations is crucial for the following reasons: crisis management, changing the strategies and planning of the manufacturers in product groups, stock management, etc. Therefore, this study will provide useful outputs for scientists, producers, policymakers, and consumers working on this subject. Based on that, in this study, the structural break dates are revealed by the time series analysis of the weekly expenditures made between the selected dates using the CBRT data.

2 RESEARCH METHODOLOGY

2.1 Aim and objectives of the research

Consumption expenditures of consumers can be followed in different ways with macroeconomic data and official statistics. It is important to be able to analyse the effects of an epidemic such as Covid-19 quickly and accurately in order to take timely precautions. Based on that, in this study, "Debit Card and Credit Card Spending" statistics published weekly by the CBRT were used and analyses were made using the data for the period 6/3/2015–5/8/2022.

Structural breaking points in consumers' debit and credit card spending amounts and spending tendencies during the Covid-19 pandemic process, were found. Also, the decisions and measures taken

before the breaking dates were specified and the relationship between them was examined. Depending on the purpose of the study, the objectives are as follows:

- distribution between debit and credit card expenditures and spending items,
- to analyse the weekly changes in spending items during the pandemic and to reveal the relationship between structural break points and possible causes.

2.2 Data

The data of the study consists of weekly debit card and credit card expenditure amounts (thousand TL) for the period 6/3/2015–5/8/2022 and were obtained from the CBRT EDDS. Since the CBRT did not provide the data on daily basis, it was necessary to work with weekly data. In this context, "Debit Card and Credit Card Spending" statistics published by the CBRT on weekly basis and with a one-week delay were used. The main reason why the time range was chosen to reflect the pre-pandemic period is that the analyses to be made on the time series will be made with data in a wide range to clearly reflect the changes in the relevant period. In EDDS, card expenditures are presented both on total spending and various expenditure items. In this study, the effect of the pandemic on consumer spending was realized through consumption items. At the same time, the data are seasonally adjusted. Information on the items discussed and their explanations are given in Table A1 in the Annex.

2.3 Econometric methodology

The mean, trend or both components of a time series may change due to momentary shocks such as economic crises, policy changes, epidemics and natural disasters. Since the variables used in time series analysis may change over time, structural breaks may occur. The process of finding structural breaks or change points is based on quality control, and over time it has also been used in the fields of economics, finance, climatology and engineering (Aue and Horváth, 2013).

The Bai and Perron (BP) structural break test was used in the study. Bai and Perron (1998) established the theoretical structure for the determination of statistical distributions in case of structural break in a linear model estimated by the least squares method (Yıldırım, 2011).

The Bai Perron (BP) approach is not fundamentally a unit root test as it does not test any hypothesis regarding the stationarity of the series. The BP approach, which divides the relationship into regimes by finding significant structural breaks in the linear model with several different testing strategies, considers the following multiple linear regression model with m break (m + 1 regime):

$$y_t = x_t'\beta + z_t'\delta_j + u_t, \qquad t = T_{j-1} + 1, ..., T_j, \qquad j = 1, ... m + 1, \qquad (1)$$

where: y_t dependent variable, x_t (p × 1) dimensional and z_t (q × 1) dimensional vector of arguments; β and δ_j (j = 1, ⋯ m + 1) are the coefficients vector and u_t represents the error term. With $T_0 = 0$ and $T_{m+1} = T$, T_1, ⋯, T_m represent unknown break times. The main purpose of the BP approach is to estimate the unknown regression coefficients and break dates together using the T-observed data set (Mert and Çağlar, 2019; Çil Yavuz, 2015). In the BP approach, the coefficients and break dates minimize the sum of squares of the model in Formula (1) and thus the regimes are an algorithm based on dynamic programming. Bai and Perron have developed different test strategies for structural break analysis:

- global L break test (*SupF test*),
- double maximum tests (UD_{max} and WD_{max}),
- sequential Bai-Perron test (*SupF(l|l + 1)*test),
- break analysis based on information criteria.

The global L break test is a *supF* type test recommended for trendless series that analyze only level breaks and tests k breaks (m = k) despite the hypothesis that there is no structural break (m = 0).

Against the null hypothesis that there is no structural break ($m = 0$) in the double maximum tests, the alternative hypothesis with the maximum M structural breaks ($m \leq M$) is tested. In the sequential Bai-Perron test, on the other hand, the null hypothesis of no break at the beginning ($m = 0$) is tested, but the alternative hypothesis with 1 break is tested. If the null hypothesis is rejected, then the hypothesis of 1 break ($m = 1$) versus the null hypothesis of 2 breaks is tested. This is continued sequentially until the null hypothesis cannot be rejected. In the break based on the information criterion, it is aimed to find the number of breaks that minimize the value of the selected information criterion. Instead of the Akaike Information Criteria (AIC), mostly Bayesian Information Criteria (BIC), Schwarz (SIC) or modified Schwarz (LWZ) information criteria are taken into account (Mert and Çağlar, 2019). In this context, regimens were accepted as heterogeneous in the study, Sequential Bai-Perron test was preferred and heteroskedasticity autocorrelation consistent (HAC) correction was used. Quadratic spectral kernel function is used with First order autoregressive process (AR(1) approach). Andrews automatic bandwidth method was chosen and the error distributions were considered heterogeneous according to the regimes.

In this study, it was thought that it would be appropriate to use the BP method, which determines the structural break dates internally, in order to more clearly reveal the structural changes that occurred during the pandemic period. The BP method was chosen for three reasons. *First*, the method can handle multiple structural breaks simultaneously in a series. Second, the method assumes that potential structural break points are unknown and determines these dates internally. *Finally*, the BP method gives suitable results for small samples (Cró and Martins, 2017).

The BP multiple structural break test is widely used in different disciplines: The return and volatility of crypto assets (Telli and Chen, 2020), the structural changes in Wagner's Law (Kumar and Cao, 2020), the change in CO_2 emissions (Adedoyin et al., 2020) and determining the effects of population aging on consumption and savings (Boonyasana and Chinnakum, 2019). However, despite its widespread use in the analysis of time series, the BP method is not included in studies examining consumer behaviour. One of the studies in this area is Yang et al. (2019), they examined consumer demands for the use of different protein sources using the BP method.

In this study, the effect of the official decisions taken during the pandemic process, the statements made and the developments that took place, on consumption expenditures, and the relationship between them, were tried to be examined by taking into account the break dates obtained as a result of BP.

3 EMPIRICAL RESULTS

Descriptive statistics of bank and credit card expenditures received from the CBRT are given in Table A2 in the Annex. The coefficient of variation was calculated as an indicator of the volatility in expenditure amounts. Accordingly, it is seen that the biggest volatility in the related period is in "airline", "online shopping" and "accommodation" expenditures. The expenditure with the least volatility is the expenditures made in the "individual retirement" sector, followed by the "telecommunication" expenditures.

The median values of bank and credit card expenditure amounts are given in Figure 1. In the said period (6/3/2015–5/8/2022), it is seen that the highest amount of spending on average is in "online shopping" and "market" shopping.

The dates of April 2019 and February 2021 were chosen to represent the onset of the pandemic and its relative relief in Turkey, and the general situation of card expenditures on these dates was examined. Accordingly, the total number of credit cards, which was 67 242 148 in April 2019, increased to 77 254 183 in February 2021. The total number of debit cards, which was 124 487 793, reached 141 270 606. The total number of transactions, which was 342 838 029 with credit cards and 181 336 010 with credit cards in April 2019, increased to 347 342 572 and 199 017 145 in February 2021, respectively. The sectoral distributions of the total number of bank and credit card transactions in April 2019 and February 2021 is given in Figure 2 and Figure 3.

Figure 1 Median values of expenditure amounts
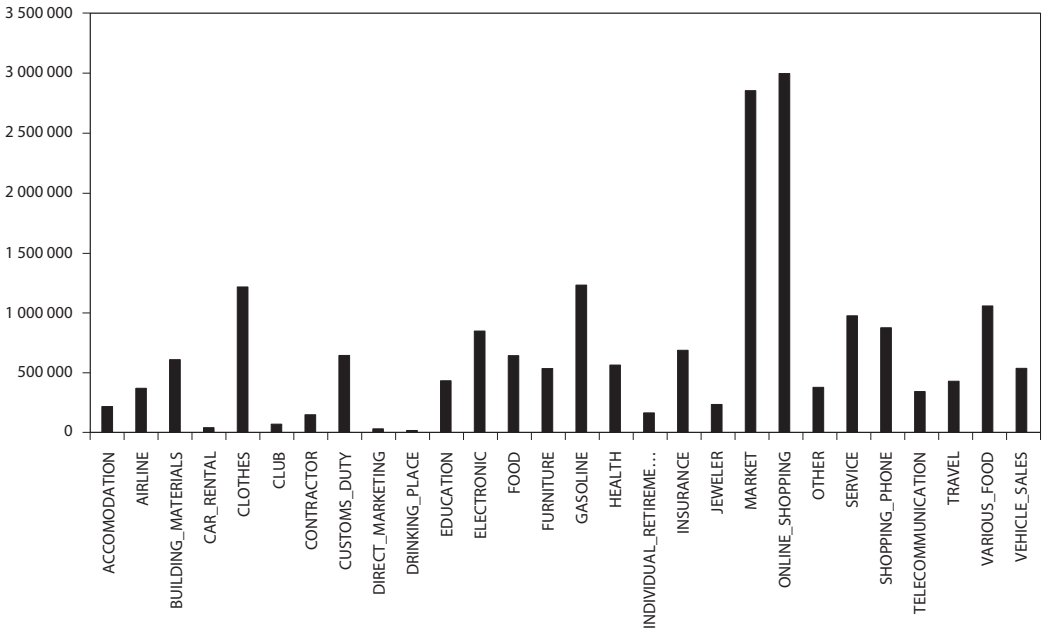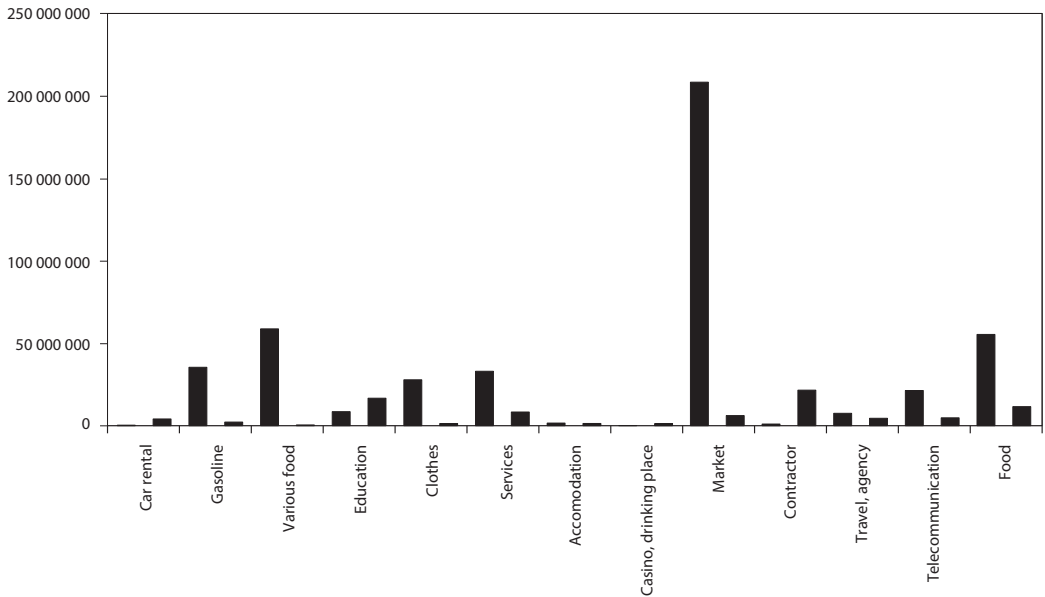

Source: The Central Bank of the Republic of Türkiye (CBRT)

Figure 2 Sectoral distribution of total number of debit and credit card transactions as of April 2019
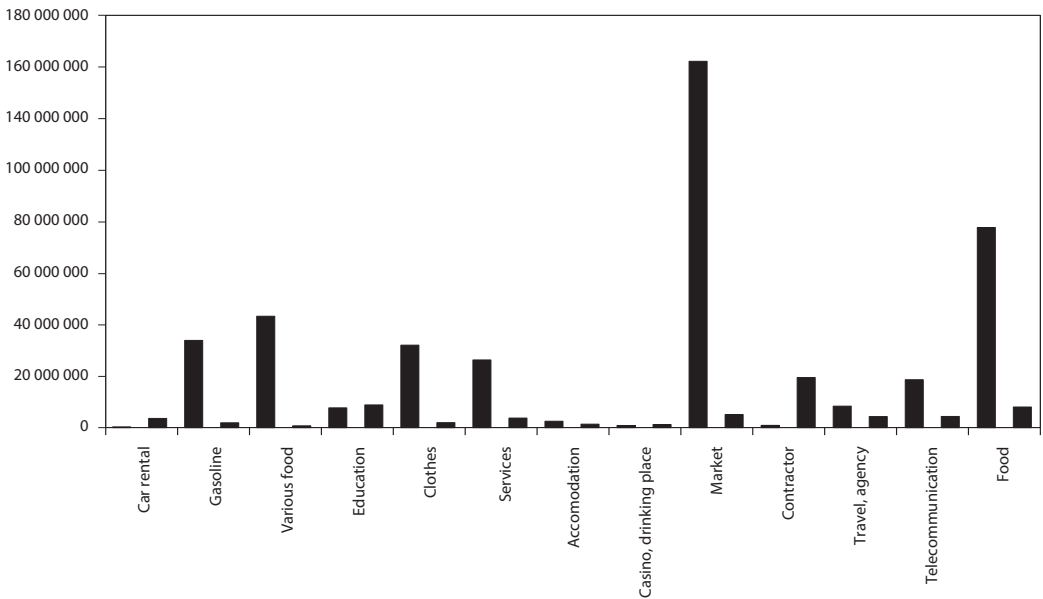
Source: The Central Bank of the Republic of Türkiye (CBRT)

Figure 3 Sectoral distribution of total number of debit and credit card transactions as of February 2021

Source: The Central Bank of the Republic of Türkiye (CBRT)

The sectoral distribution of the total number of debit and credit card transactions as of April 2019 (Figure 2) and the sectoral distribution of the total number of debit and credit card transactions as of February 2021 (Figure 3) are given. When these two figures are compared, while the number of transactions increases (expenses) in food, electrical/electronic goods, computers, markets and shopping centres, the number of transactions and thus the expenditures decreased in the travel agencies/transportation, building materials, hardware, ironmongery, airlines, clothing and accessories, furniture and decoration groups.

Whether there is a structural break in bank and credit card expenditures for the period 6/3/2015–5/8/2022 and, if any, the data covering these dates have been analysed with the help of BP analysis and the break dates obtained are shown in Table 1. All analyses were made in E-views 12 program. The highest breaks observed are "individual retirement", "building material", "contractor", "drinking place", "health", "market", "online shopping", "service", "shopping phone", "travel", "various food" and "vehicle sales" expenditures. Expenditure item with a single break is an "accommodation".

Considering the breaking dates in all expenditures as a result of the BP analysis, Figure 4 was created to see how many expenditure types were observed during these dates. According to the figures, the highest break was observed in the week of July 23, 2021, while a structural break occurred in a total of 14 expenditure items, as can be seen from Table 1.

Therewithal, the week of July 16, 2021 is in the second place with 11 intervals. From Figure 4, it is seen that after the pandemic announcement, the breaks increased in March and April 2020 and intensified as of May 2020. In July 2021, which coincides with the end of the restrictions, it is seen that the breaks reached the highest level.

The graphs showing the break dates and direction changes obtained as a result of the structural break analyses made with BP for bank and credit card expenditures are given in Figures 5(a–c) in the online
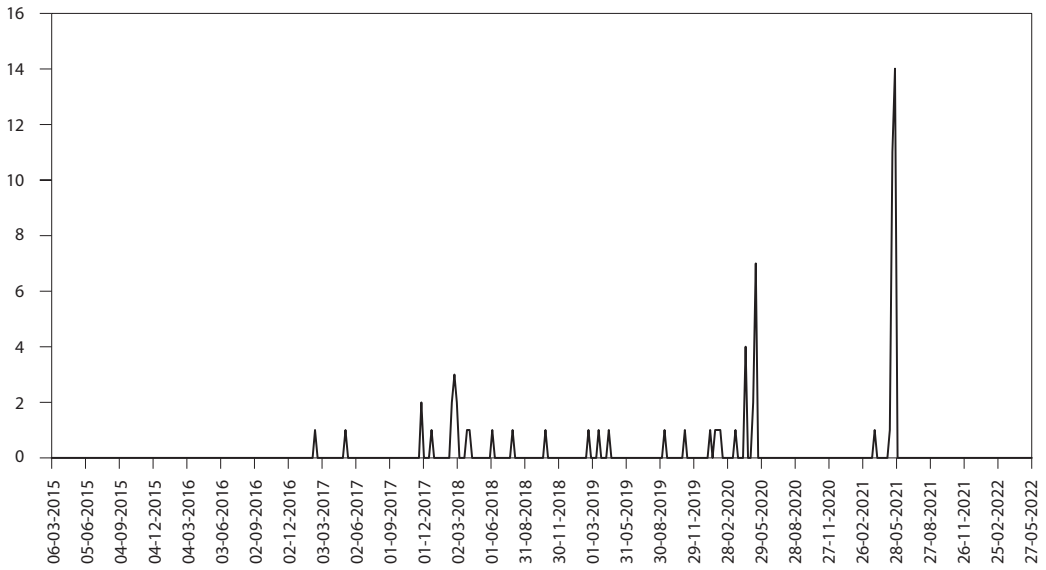
version. One of the most striking results in the charts is that all three downside breaks coincided with the period when the pandemic was declared in Turkey. "drinking place", "tax" and "travel" are expenditures where downward breaks are observed.

Another striking result regarding the period under consideration; In the period of July 2021, when the pandemic ended in Turkey, upward breaks were observed in all expenditure items except "tax". A total of 25 breaks were observed during the weeks of 16 and 23 July 2021, all of which were upside breaks. The breaks in these dates show that there has been a serious increase in the expenditures of "club", "airline", "drinking place", "service", "online shopping" and "market" with the removal of restrictions.

Table 1 Structural break dates and directions of breakage in spending amounts

Series	Break times and direction			
ACCOMMODATION	23/7/2021↑			
AIRLINE	23/3/2018↑	23/7/2021↑		
BUILDING_MATERIALS	22/12/2017↑	5/6/2020↑	16/7/2021↑	
CAR_RENTAL	3/7/2020↑	23/7/2021↑		
CLOTHES	23/3/2018↑	16/7/2021↑		
CLUB	24/5/2019↑	16/7/2021↑		
CONTRACTOR	22/12/2017↑	5/6/2020↑	16/7/2021↑	
DIRECT_MARKETING	20/12/2019↑	23/7/2021↑		
DRINKING_PLACE	30/11/2018↑	20/3/2020↑	23/7/2021↑	
EDUCATION	31/8/2018↑	9/7/2021↑		
ELECTRONIC	8/5/2020↑	16/7/2021↑		
FOOD	23/3/2018↑	23/7/2021↑		
FURNITURE	5/6/2020↑	16/7/2021↑		
GASOLINE	23/7/2021↑			
HEALTH	30/3/2018↑	26/6/2020↑	16/7/2021↑	
INDIVIDUAL_RETIREMENTS	3/3/2017↑	26/4/2019↑	3/7/2020↑	23/7/2021↑
INSURANCE	25/10/2019↑	16/7/2021↑		
JEWELER	29/3/2019↑	16/7/2021↑		
MARKET	4/5/2018↑	13/3/2020↑	23/7/2021↑	
ONLINE_SHOPPING	6/7/2018↑	3/7/2020↑	23/7/2021↑	
OTHER	3/7/2020↑	23/7/2021↑		
SERVICE	27/4/2018↑	3/7/2020↑	23/7/2021↑	
SHOPPING_PHONE	16/3/2018↑	26/6/2020↑	16/7/2021↑	
TAX	26/5/2017↑	27/3/2020↑		
TELECOMMUNICATION	3/7/2020↑	23/7/2021↑		
TRAVEL	19/1/2018↑	28/2/2020↑	28/5/2021↑	
VARIOUS_FOOD	30/3/2018↑	3/7/2020↑	23/7/2021↑	
VEHICLE_SALES	16/3/2018↑	5/6/2020↑	16/7/2021↑	

Source: E-Views Program

Figure 4 Number of breaks in terms of break dates

Figure 5(a) Breaks and regimens found with sequential BP

Figure 5(b) Breaks and regimens found with sequential BP

Figure 5(c) Breaks and regimens found with sequential BP

DISCUSSION AND CONCLUSION

There is no country, industry, business or consumer that has not been affected by the Covid-19 pandemic. The negative effects of the pandemic are seen especially in the service sector, and it has a wide range of effects, such as the loss of customers in the food and beverage businesses (restaurant, cafeteria, etc.) operating in the service sector, the cancellation or postponement of reservations in transportation enterprises, the closure of touristic businesses and hotels (Morris and Karmin, 2020). According to the findings of the study, it was observed that the epidemic caused deterioration in the expenditures and expenditure items of consumers in Turkey.

In this part of the study, it is discussed whether there is a relationship between the breaking points (dates) determined by the analyses made in the previous section and the statements released by the officials of official institutions and organizations regarding the Covid-19 outbreak in Turkey and it is evaluated with the results of studies on Covid-19.

The data used in the research covers the dates 6/3/2015–5/8/2022, and it is seen that the most intense breakout occurred on 16 and 23 July 2021 (Figure 4). Considering that the first coronavirus case in Turkey was announced on March 11, 2020, and with the announcement of the restrictions right after, it is seen that there is a negative break in some expenditure items. It is actually a highly expected result that the first reaction against the pandemic is in "travel" expenditures. The fact that consumers reduce their travel and holiday expenses with the epidemic is related to the seriousness of the epidemic and the closing of borders both inside and outside the country.

According to the new restrictions announced on March 15, 2020, it has been decided to temporarily close bars and nightclubs. The effect of this decision showed itself in the week of March 20, 2020, and a downward break was observed in "drinking place" expenditures. According to a new decision announced on March 22, 2020, all enforcement and bankruptcy proceedings have been postponed, except for enforcement proceedings regarding alimony receivables. The effect of this news caused the "goverment/ tax payments" expenditures to break down in the week of March 27, 2020.

Again, on 5/6/2020 and 3/7/2020, it is seen that there are positive breaks in 11 expenditure items. Depending on the decisions taken in the second phase of the normalization process announced on June 1, 2020, a positive break in the expenditures of "car rental", "service", "telecommunication", "vehicle sales", "contractor", "building materials" and "furniture" appears to be.

After the start of the pandemic process in Turkey, it is seen that there is a fluctuation in the expenditures of consumers (Figure 4). Jung et al. (2020) analysed the effect of the epidemic on consumer spending by analysing the expenditures made by bank and credit card, and according to their findings, they revealed that the epidemic caused a significant deterioration in consumer spending.

Despite the apparent decrease in "travel" and "drinking place" expenditures during the period between the beginning and the end of the pandemic, the increase in expenditures in other items is one of the remarkable points of this study. Binder (2020) investigated the opinions of consumers in the USA on the interest rate cut of the US Federal Reserve (FED) and the decisions they made due to the fear of coronavirus. According to the findings of the study, it was revealed that 40% of consumers purchased food or supplies due to coronavirus concerns, and 28% canceled their travel plans. Again, Coibion et al. (2020) examined how various restrictions and bans brought about by Covid-19 affect consumers' household spending and macroeconomic expectations at the local level. About 50% of the participants stated that they lost their income and wealth due to the corona virus, and that their total consumption expenditures decreased, especially in travel and clothing. Güder et al. (2021), concluded that the use of public transportation decreased, the consumers would not participate in social activities for 6 months after the epidemic ended, they canceled their holiday plans, and they would not prefer crowded holiday areas for 12 months even if the epidemic ended. Sayyida et al. (2021) stated that the increase in online retail sales in the second quarter of 2020 was due to unusual purchasing behavior as consumers fear market restrictions due to the global Covid-19 pandemic.

The first case in Turkey was announced on March 11, 2020. With the statement made on March 12, the education was suspended, and it was decided to play sports competitions without spectators. One day after these decisions, the borders with some of the EU member states were closed. After these explanations, as can be seen in Table 1, structural breaks were detected in various expenditure items in March. As of the end of May and the beginning of June, the restrictions were partially relaxed and domestic travel restrictions were lifted. After these statements, it was observed that upside breaks intensified this time.

With the removal of the restrictions as of June 2021, despite a few breaks seen at the beginning of the pandemic, it has been observed that the expenditures have increased markedly in all items. This is an important result of the study. The reaction of consumers to the restrictions and their reactions to the end of the restrictions differ significantly. While the restrictions do not change the card expenditures, card expenditures suddenly increased with the return to normal life. Jones (2020) states that consumers' lives

will be divided into two groups as before and after the epidemic, and there will be significant differences between the two lifestyles. Due to the rapid spread of the virus, consumers who are afraid of the crowd may not prefer crowded places such as entertainment places, restaurants, shopping malls, gyms, even after the virus is under control. Even socializations can be home-based or in smaller groups. According to He and Harris (2020), although the short-term impact of the Covid-19 pandemic process is hardly felt in the initial period due to globally widespread quarantine and social distancing measures, long-term economic, social, political, and cultural effects, negative effects on ideas, beliefs, values, habits, and behavior will be seen once the pandemic process ends. In addition to the fact that the pandemic process causes significant changes in consumer priorities, behavior and spending, governments and businesses around the world should take measures to mitigate the effects of the pandemic by acting with proactive foresight (İri, 2021).

We hope that the study will contribute to further studies on the Covid-19 outbreak, and will provide information, discussion and guidance for future studies on this subject. Restrictions brought by governments and the impact of the Covid-19 pandemic may differ geographically, even within the country. In the future, new studies can be conducted by considering this situation. In addition, this research can be renewed by expanding the range of use of the data, so that the fluctuations and their causes can be analysed in more detail.

Of course, when interpreting the findings of the analysis, it should also be considered that consumers may have changed their payment methods due to anxiety about infectious diseases. Some of the increases in card spending may be due to the change in payment method rather than the spending behavior itself. For this reason, it will be important in this respect to conduct a similar study on card expenditures after the pandemic.

References

ADEDOYIN, F., OZTURK, I., ABUBAKAR, I., KUMEKA, T., OLUDELE, F., BEKUN, F. (2020). Structural Breaks in CO_2 Emissions: Are They Caused by Climate Change Protests or Other Factors? [online]. *Journal of Environmental Management*, 266: 110628. <https://doi.org/10.1016/j.jenvman.2020.110628>.

AĞAN, B. (2020). The Impact of Covid-19 Pandemic Process on Digital Payment system: the Case of Turkey. *Eurasian Journal of Researches in Social and Economics*, 7(7):229–240.

ALGASSIM, A. A., ABUELHASSAN, A. E. (2021). The Effect of Covid-19 on Potential Tourist's Consumption Behavior: Evidence from GCC Countries [online]. *Journal of Association of Arab Universities for Tourism and Hospitality*, 20(1): 129–144. <https://doi.org/10.21608/JAAUTH.2021.55964.1108>.

AKTER, S., ASHRAFI, T., WALIGO, V. (2021). Changes in Consumer Purchasing Behavior Due to Covid-19 Pandemic [online]. *Changes*, 77: 33–46. <https://doi.org/10.7176/JMCR/77-04>.

ANDERSEN, A. L., HANSEN, E. T., JOHANNESEN, N. A., SHERIDAN, A. (2020). Consumer Responses to the Covıd-19 Crıses: Evıdence From Bank Acount Transactıon Data [online]. *Working Paper 18/20.* [cit. 20.12.2020]. <https://ssrn.com/abstract=3609814>.

ATEŞ, E. (2021). Covid-19 Salgınının Türkiye'nin Dış Ticaretine Etkisi: Bir Yapısal Kırılma Analizi [online]. *İzmir İktisat Dergisi*, 36(3): 617–627. <https://doi.org/10.24988/ije.202136308>.

AUE, A., HORVÁTH, L. (2013). Structural Breaks in Time Series [online]. *Journal of Time Series Analysis*, 34(1): 1–16. <https://doi.org/10.1111/j.1467-9892.2012.00819.x>.

BAI, J., PERRON, P. (1998). Estimating And Testing Linear Models With Multiple Structural Changes [online]. *Econometrica*, 66: 47–68. <https://doi.org/10.2307/2998540>.

BACHAS, N., GANONG, P., NOEL, P. J., VAVRA, J. S., WONG, A., FARRELL, D., GREIG, F. E. (2020). Initial Impacts of the Pandemic On Consumer Behavior: Evıdence From Linked Income, Spending, and Savings Data [online]. *Working Paper 27617.* [cit. 19.12.2020]. <http://www.nber.org/papers/w27617>.

BINDER, C. (2020). Coronavirus Fears and Macroeconomic Expectations [online]. *Review of Economics and Statistics*, 102(4): 721–730. <https://doi.org/10.1162/rest_a_00931>.

BOONYASANA, P., CHINNAKUM, W. (2019). Impact of Population Aging on Consumption and Saving in Thailand: Structural Break Approach. *Thai Journal of Mathematics*, Special Issue, Structural Change Modeling and Optimization in Econometrics, 109–120.

CANT, M. C. (2021). Will Household Consumption Ever be the Same Again? The New Normal Post Covid-19. *Srusti Management Review*, 14(1): 16–31.

CHENARIDES, L., GREBITUS, C., LUSK, J. L., PRINTEZIS, I. (2021). Food Consumption Behavior During the Covid-19 Pandemic [online]. *Agribusiness*, 37(1): 44–81. <https://doi.org/10.1002/agr.21679>.

CHIKHI, K. (2021). Consumption Behavior of Algerians During the Period of the Covid-19 Pandemic Crisis [online]. *Markets, Globalization & Development Review*, 5(4): Article 4. <https://doi.org/10.23860/MGDR-2020-05-04-04>.

COIBION, O., GORODNICHENKO, Y., WEBER, M. (2020). The Cost of the Covid-19 Crisis: Lockdowns [online]. *Macroeconomic Expectations, and Consumer Spending No. w27141*, National Bureau of Economic Research. <https://doi.org/10.3386/w27141>.

COX, N., GANONG, P., NOEL, P., VAVRA, J., WONG, A., FARRELL, D. GREIG F. (2020). Initial Impacts of the Pandemic on Consumer Behavior: Evidence from Linked Income, Spending and Savings Data [online]. *Becker Friedman Institute for Economics Working Paper No. 2020-82*, University of Chicago. <https://ssrn.com/abstract=3633008>.

CRÓ, S., MARTINS, A. (2017). Structural Breaks in International Tourism Demand: Are They Caused By Crises Or Disasters? [online]. *Tourism Management*, 63: 3–9. <https://doi.org/10.1016/j.tourman.2017.05.009>.

ÇİL YAVUZ, N. (2015). *Finansal Ekonometri*. 2. Ed. İstanbul: Der Yayınevi.

DONTHU, N., GUSTAFSSON, A. (2020). Effects of Covid-19 on Business and Research [online]. *Journal of Business Research*, 117: 284–289. <https://doi.org/10.1016/j.jbusres.2020.06.008>.

EGER, L., KOMÁRKOVÁ, L., EGEROVÁ, D., MIČÍK, M. (2021). The Effect of Covid-19 on Consumer Shopping Behaviour: Generational Cohort Perspective [online]. *Journal of Retailing and Consumer Services*, 61: 102542. <https://doi.org/10.1016/j.jretconser.2021.102542>.

GARBE, L., RAU, R., TOPPE, T. (2020). Influence of Perceived Threat of Covid-19 and HEXACO Personality Traits on Toilet Paper Stockpiling [online]. *Plos one*, 15(6): e0234232. <https://doi.org/10.1371/journal.pone.0234232>.

ERDOĞAN, B. Z. (2020). Yeni Normal Dönemde Tüketim ve Harcama Pratikleri, Küresel Salgının Anatomisi. In: ŞEKER, M., ÖZER, A., VE KORKU, C. (eds.) *İnsan ve Toplumun Geleceği*, Ankara: Türkiye Bilimler Akademisi.

GARBE, L., RAU, R., TOPPE, T. (2020). Influence of Perceived Threat of Covid-19 and HEXACO Personality Traits on Toilet Paper Stockpiling. *Plos one*, 15(6): e0234232.

GÜDER, F., GÜNGÖR, M., YÜCEKAYA, P. (2021). Covid-19 Salgınının Tüketici Davranışları Üzerine Etkisinin Yönetim Stratejileri Bağlamında Değerlendirilmesi. *Anadolu Akademi Sosyal Bilimler Dergisi*, 3(1): 59–76.

HACIALİOĞLU, A., SAĞLAM, M. (2021). Covid-19 Pandemi Sürecinde Tüketici Davranışları ve E-Ticaretteki Değişimler. *Medya ve Kültürel Çalışmalar Dergisi*, 3(1): 16–29.

HE, H., HARRIS, L. (2020). The Impact of Covid-19 Pandemic on Corporate Social Responsibility and Marketing Philosophy [online]. *Journal of Business Research*, 116: 176–182. <https://doi.org/10.1016/j.jbusres.2020.05.030>.

HOWARD, M. C. (2020). Who Wants to Reopen the Economy During the Covid-19 Pandemic? The Daring and Uncaring [online]. *Personality and Individual Differences*, 168: 110335. <https://doi.org/10.1016/j.paid.2020.110335>.

IPSOS. (2020). MURPHY, C., NAERT, S., STRONG, C. *Coronavirus & Behavior Change. What Does This Mean for Brands?* [online]. IPSOS. <https://www.ipsos.com/12.10.2021>.

İRİ, R. (2021). Covid-19 Pandemi Sürecinin Niğde Ve Yöresindeki Tüketicilerin İnternet Üzerinden Satın Alma Davranışlarına Etkisi. *Adıyaman Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 37: 570–602.

JRIBI, S., BEN-ISMAIL, H., DOGGUI, D., DEBBABI, H. (2020). Covid-19 Virus Outbreak Lockdown: What Impacts on Household Food Wastage? [online]. *Environment, Development and Sustainability*, 22(5): 3939–3955. <https://doi.org/10.1007/s10668-020-00740-y>.

JO, H., SHIN, E., KIM, H. (2020). Changes in Consumer Behaviour in the Post-Covid-19 Era in Seoul, South Korea [online]. *Sustainability*, 13(1): 136. <https://doi.org/10.3390/su13010136>.

JONES, K. (2020). *How Covid-19 Consumer Spending Is Impacting Industries* [online]. Visual Capitalist. [cit. 28.9.2021]. <https://www.visualcapitalist.com/consumer-spending-impacting-industries>.

JUNG, J., HWANOONG, L., KYUNG-HO, S. (2020). Public finance responses to Covid-19 in Korea [online]. *National Tax Journal*, 73(3): 879–900. <https://doi.org/10.17310/ntj.2020.3.11>.

KARTAL, C., ŞENTÜRK, E. E. (2020). Covid-19 Dönemi Tüketici Harcamalarındaki Değişiklikler, Sanayi ve Ticari Faaliyetler Üzerindeki Etkileri. *5th International Scientific Research Congress*, (IBAD) Bildiriler, September 1–2, 162–172.

KANTUR, Z., ÖZCAN, G. (2021). Card spending dynamics in Turkey during the Covid-19 pandemic [online]. *Central Bank Review*, 21(3): 71–86. <https://doi.org/10.1016/j.cbrev.2021.07.002>.

KIRK, C. P., RIFKIN, L. S. (2020). I'll Trade You Diamonds for Toilet Paper: Consumer Reacting, Coping and Adapting Behaviors in the Covid-19 Pandemic [online]. *Journal of Business Research*, 117: 124–131. <https://doi.org/10.1016/j.jbusres.2020.05.028>.

KISSLER, S. M., TEDIJANTO, C., GOLDSTEIN, E., GRAD, Y. H., LIPSITCH, M. (2020). Projecting the Transmission Dynamics of Sars-Cov-2 through the Postpandemic Period [online]. *Science*, 368(6493): 860–868. <https://doi.org/10.1126/science.abb5793>.

KOÇAK, N. A. (2020). Türkiye'de Kartla Yapılan Harcama Davranışları ve Covid-19'un Etkisi. *Bankacılar Dergisi*, 31(114): 109–125.

KOTLER, P. (2020). The Consumer in the Age of Coronavirus [online]. *Journal of Creating Value*, 6(1): 12–15. <https://doi.org/10.1177/2394964320922794>.

KUMAR, S., CAO, Z. (2020). Testing for Structural Changes in the Wagner's Law for a Sample of East Asian Countries [online]. *Empirical Economics*, 59(4): 1959–1976. <https://doi.org/10.1007/s00181-019-01686-5>.

LANCET (2020). Reviewing the US CDC [online]. *The Lancet*, May 16, 395(10236): 1521. <https://doi.org/10.1016/S0140-6736(20)31140-5>.

LEHBERGER, M., KLEIH, A. K., SPARKE, K. (2021). Panic Buying in Times of Coronavirus (Covid-19): Extending the Theory of Planned Behavior to Understand the Stockpiling of Nonperishable Food in Germany [online]. *Appetite*, 161: 105118. <https://doi.org/10.1016/j.appet.2021.105118>.

MORRIS, K., KARMIN, C. (2020). Hotels Turn to Layoffs, Room Rate Cuts As Business Staggers [online]. *The Wall Street Journal*. <https://www.wsj.com/articles/hotels-turn-to-layoffs-room-rate-cuts-as-business-staggers-11584108223>.

MERT, M., ÇAĞLAR, A. E. (2019). *Eviews ve Gauss Uygulamalı Zaman Serileri Analizi*. Amkara: Detay Yayıncılık.

OTA, R., RAY, S. S., KUMAR, R. (2020). A Study on the Indian Consumer Mindset Towards Online Shopping During the Pandemic Period: a Special Reference to Flipkart. *Science, Technology and Development*, 9(7): 197–203.

PÉREZ-RODRIGO, C., CITORES, M. G., HERVÁS-BÁRBARA, G., LITAGO, F. R., CASIS-SÁENZ, L., ARANCETA-BARTRINA, J., VAL, V. A., LÓPEZ-SOBALER, A. M., MARTÍNEZ DE VICTORIA, E., ORTEGA, R. M. et al. (2020). Cambios En Los Hábitos Alimentarios Durante El Periodo De Confinamiento Por La Pandemia Covid-19 En España. *Rev. Esp. Nutr. Comunitaria,* 26(2): 28010.

SAYYIDA, S., HARTINI, S., GUNAWAN, S., HUSIN, S. N. (2021). The Impact of the Covid-19 Pandemic on Retail Consumer Behavior [online]. *Aptisi Transactions on Management*, 5(1): 79–88. <https://doi.org/10.33050/atm.v5i1.1497>.

SHETH, J. (2020). Impact of Covid-19 on Consumer Behavior: Will the Old Habits Return or Die? [online]. *Journal of Business Research*, 117: 280–283. <https://doi.org/10.1016/j.jbusres.2020.05.059>.

SÖZBİLİR, A. (2021). *Bunalım 30 Yıl Sürebilir* [online]. Capital. <https://www.capital.com.tr/is-dunyasi/soylesiler/bunalim-30-yil-surebilir>.

TEMIZKAN, V., GÜVEN, E. Ö., YILMAZER, A., ANDSOY, C. (2021). A Research on Consumer Behavıor and Trends with Covid-19. *Electronic Journal of Social Sciences*, 1311–1327.

TAYLOR, S. (2021). Understanding and Managing Pandemic-related Panic Buying [online]. *Journal of Anxiety Disorders*, 70: 102364. <https://doi.org/10.1016/j.janxdis.2021.102364>.

TEKİN, İ. Ç. (2020). Pandemi Sürecinde Değişen Tüketici Davranışları. *Business & Management Studies: an International Journal*, 8(2): 2331–2347.

TELLI, Ş., CHEN, H. (2020). Structural Breaks and Trend Awareness-based Interaction in Crypto Markets [online]. Physica *A: Statistical Mechanics and its Applications*, 558: 124913. <https://doi.org/10.1016/j.physa.2020.124913>.

TOLUN, B. G., BULUT, N. (2021). Covid-19 Pandemi Sürecinde Tüketicilerin Gıda Ürünleri Satın Alma Davranışları Üzerine Bir Araştırma. *Pamukkale Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 45: 15–31.

XIE, X., HUANG, L., LI, J. J., ZHU, H. (2020). Generational Differences in Perceptions of Food Health/Risk and Attitudes Toward Organic Food and Game Meat: the Case of the Covid-19 Crisis in China [online]. *International Journal of Environmental Research and Public Health*, 17(9): 3148. <https://doi.org/10.3390/ijerph17093148>.

WANG, H. H., NA, H. A. O. (2020). Panic Buying? Food Hoarding During the Pandemic Period with City Lockdown [online]. *Journal of Integrative Agriculture*, 19(12): 2916–2925. <https://doi.org/10.1016/S2095-3119(20)63448-7>.

WEERSINK, A., VON MASSOW, M., MCDOUGALL, B. (2020). Economic Thoughts on the Potential Implications of Covid-19 on the Canadian Dairy and Poultry Sectors [online]. *Canadian Journal of Agricultural Economics*, 68(2): 195–200. <https://doi.org/10.1111/cjag.12240>.

WEERSINK, A., VON MASSOW, M., MCDOUGALL, B. (2020). Economic Thoughts on the Potential Implications of Covid-19 on the Canadian Dairy and Poultry Sectors. *Canadian Journal of Agricultural Economics*, 68(2): 195–200.

WEN, J. KOZAK, M., YANG, S., LIU, F. (2020). Covid-19: Potential Effects on Chinese Citizens' Lifestyle and Travel. *Tourism Review*, 76(1): 74–87.

YANG, R., RAPER, K. C., PRUITT, J. R. (2019). The influence of recession and income strata on consumer demand for protein sources [online]. *Applied Economics*, 51(42): 4615–4628. <https://doi.org/10.1080/00036846.2019.1593940>.

YILDIRIM, S. (2011). Türkiye'de Histeri Hipotezinin Geçerliliğinin Çoklu Yapısal Kırılmalı CKP Birim Kök Testiyle Sınanması. *Akdeniz İİBF Dergisi*, 11(22): 28–47.

ANNNEX

Table A1 Time series and explanations used in the study

Series name	Description
Accommodation	Accommodation (thousand TL)
Airlines	Airlines (thousand TL)
Building material	Building materials, hardware, ironmongery (thousand TL)
Car rental	Car rental (thousand TL)
Clothes	Clothing and accessories (thousand TL)
Club	Club/Association/Social services (thousand TL)
Contractor	Contractor works (thousand TL)
Direct marketing	Direct marketing (thousand TL)
Accommodation	Accommodation (thousand TL)
Airlines	Airlines (thousand TL)
Building material	Building materials, hardware, ironmongery (thousand TL)
Car rental	Car rental (thousand TL)
Clothes	Clothing and accessories (thousand TL)
Club	Club/Association/Social services (thousand TL)
Education	Education/Stationery/Office supplies (thousand TL)
Electronic	Electrical-electronic goods, computer (thousand TL)
Food	Food (thousand TL) level public/Tax payments (thousand TL)
Furniture	Furniture and decoration (thousand TL)
Gasoline	Gasoline and fuel stations (thousand TL)
Health	Health/Health products/Cosmetics (thousand TL)
Individual retirement	Private pension (thousand TL)
Insurance	Insurance (thousand TL)
Jeweler	Jewelers (thousand TL)
Market	Markets and shopping centers (thousand TL)
Online shopping	Online shopping (thousand TL)
Other	Other (thousand TL)
Service	Service sectors (thousand TL)
Shopping phone	Shopping by letter/Telephone (thousand TL)
Tax	Government/Tax payments (thousand TL)
Telecommunication	Telecommunications (thousand TL)
Travel	Travel agencies/Transportation (thousand TL)
Various food	Various food (thousand TL)
Vehicle sales	Car rental-sales/Service/Spare parts (thousand TL)

Source: The Central Bank of the Republic of Türkiye (CBRT)

Table A2 Descriptive statistics

Series	Mean	Median	Maximum	Minimum	Std. dev.	Skewness	Kurtosis	Coefficient of variation
ACCOMMODATION	310 769.8	214 785	2 220 211	15 580	293 964.4	3.531901	18.64831	0.972586
AIRLINES	551 819.7	368 254	3 186 371	16 311	582 789.9	2.744017	10.63689	1.027679
BUILDING_ MATERIALS	856 134.2	605 614.5	3 574 739	154 461	646 348.2	2.17292	7.523153	0.868885
CAR_RENTAL	54 223.23	39 399	330 729	12 925	45 947.76	3.096167	14.97574	0.920533
CLOTHES	1 531 768	1 212 417	6 941 531	369 195	981 448	2.267506	8.887688	0.800455
CLUB	90 088.72	68 274.5	945 334	25 525	70 809.14	6.158084	62.65455	0.886563
CONTRACTOR	21 6219.9	146 766.5	1 195 177	27 687	194 717.1	2.224439	8.155135	0.948974
DIRECT_MARKETING	36 333.46	28 647	197 816	9 012	21 231.69	3.37133	19.78543	0.764432
DRINKING_PLACE	24 963.6	16 472.5	133 859	1 570	22 530.16	2.045217	7.789499	0.950011
EDUCATION	539 851.4	430 350.5	2 636 855	162 178	316 543.3	2.069303	9.153874	0.765737
ELECTRONIC	1 378 169	843 934	5 212 958	415 971	1 048 743	1.708193	5.166776	0.872335
FOOD	882 780.4	640 061.5	4 273 117	173 814	754 140.5	2.315686	8.398694	0.924272
FURNITURE	676 528.1	532 659.5	2 341 070	233 879	384 697.8	2.045349	7.153598	0.754079
GASOLINE	1 558 966	1 229 087	7 738 934	584 730	1 101 152	3.141083	13.3469	0.840437
HEALTH	743 061.9	561 514.5	2 713 556	167 283	484 197.4	1.790253	5.952248	0.807233
INDIV_RETIR.	175 574	162 154.5	422 233	60 434	65 922.29	1.116574	4.38847	0.612754
INSURANCE	818 291.3	684 116	3 268 279	206 301	452 529.7	2.644097	11.68336	0.743652
JEWELER	311 015.4	233 170.5	1 439 853	55 808	215 466.8	2.443047	9.551932	0.832337
MARKET	3 919 659	2 848 942	15 517 616	1 509 559	2 635 114	2.03785	7.111298	0.819928
ONLINE_SHOPPING	4 637 090	2 991 777	23 937 765	747 114	4 417 965	1.964739	6.840043	0.976087
OTHER	656 044.7	375 033	3 164 249	138 030	604 598	2.012884	6.666738	0.95999
SERVICE	1 190 579	971 763	4 656 018	262 198	831 173	1.944176	6.736165	0.835539
SHOPPING_PHONE	1 115 899	872 463	3 952 855	370 193	702 798.4	2.236942	7.876491	0.793602
TAX	597 947.6	640 839	2 137 042	6 885	429 733.5	0.101211	2.313533	0.84775
TELECOMMUNICATION	414 281.9	340 237.5	1 097 469	166 142	167 497.3	1.472947	4.311699	0.635852
TRAVEL	508 877.7	426 679.5	2 226 818	94 173	342 215.1	2.57343	11.52179	0.820055
VARIOUS_FOOD	1 377 339	1 053 180	5 396 607	458 180	938 811	1.988575	6.833861	0.825598
VEHICLE_SALES	722 516.1	534 517	3 007 960	136 277	496 698	2.088806	7.501149	0.82913

Source: The Central Bank of the Republic of Türkiye (CBRT)