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Etkin Piyasalar Hipotezi Kapsamında İmalat Sektöründe Haftanın Günleri Anomalisi

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Özet

Etkin Piyasalar Hipotezi, yatırımcıları; faydasını en üst noktaya ulaştırmak amacıyla problemlerini çözebilen ve karar verirken duygularını kararlarına karıştırmayan bireyler olarak tanımlamaktadır. Yatırımcıların rasyonel yani aynı bir robot gibi hareket ettiğini savunmaktadır. Etkin Piyasalar Hipotezinde rasyonel insan, yatırım seçimi yaparken; beklenen fayda teorisi ile birlikte belirli kararlar veren ve hesaplanabilir tercihler yapan, piyasaya giren bilginin, fiyatlara otomatikman yansıyacağını savunan Etkin Piyasa Hipotezi yatırımcıları aynı ve hatasız kabul etmektedir. Bu çalışmada etkisi bir çok araştırmada ortaya konan 2001 ve 2008 kriz dönemlerine ek olarak covid-19 döneminde kamuoyu aydınlatma platformu (KAP) sınıflamasına göre imalat sektöründe yer alan alt sektörlerde işlem gören hisse senetlerinde haftanın günleri etkisinin olup olmadığı araştırılmıştır. Bir sektör için düşünüldüğünde üç kriz dönemi ve her bir kriz dönemi öncesi ve sonrası dönemler olmak üzere iki bölümden oluşmuş ve sonuçta bir sektör için altı dönem analiz edilmiştir. Sekiz alt sektör incelendiğinden toplamda kırk sekiz dönem analize tabi tutulmuş ve haftanın günleri etkisine bakılmıştır. Araştırmada OLS kukla değişkeni yöntemi kullanılmıştır. Çıkan sonuçlara bakıldığında kırk sekiz dönemde on iki kez pazartesi, beş kez Salı, on kez Perşembe ve üç kez de Cuma günleri ortalama getirileri BİST ortalama getirisinden anlamlı ölçüde farklılık göstermiştir.

Days of The Week Anomaly in Manufacturing Sector Within The Scope of Effective Markets Hypothesis

Keywords:

Efficient Market, Covid-19, Market Form

Abstract

The Efficient Markets Hypothesis defines investors as individuals who are able to solve problems in order to maximise their utility and who do not let their emotions interfere with their decisions. It argues that investors are rational, that is, they act like a robot. In the Efficient Markets Hypothesis, rational people make certain decisions and make calculable preferences with the expected utility theory when making investment choices, and the Efficient Market Hypothesis, which argues that the information entering the market will be automatically reflected in the prices, accepts investors as the same and error-free. In this study, in addition to the 2001 and 2008 crisis periods, the impact of which has been revealed in many studies, it has been investigated whether there is a days of the week effect on stocks traded in the sub-sectors in the manufacturing sector according to the Public Disclosure Platform (KAP) classification during the Covid-19 period. Considering for one sector, three crisis periods and each crisis period consisted of two parts as pre- and post-crisis periods, and as a result, six periods were analysed for one sector. Since eight sub-sectors were analysed, a total of forty-eight periods were analysed and the days of the week effect was examined. OLS dummy variable method was used in the research. When the results are analysed, the average returns on Monday twelve times, Tuesday five times, Thursday ten times and Friday three times in forty-eight periods differed significantly from the BIST average return.

INTRODUCTION

The views that excessive price movements in the markets and excessive gains/losses are not possible due to factors such as rational decision-making of investors in financial markets, fast and complete access to all information about the markets and the rapid reflection of this information on the prices of financial assets are the common point of most financial models that are considered traditional. However, many scientific studies, especially after the 1980s, have started to prove the existence of contrary situations.

This recent evidence has made the Efficient Market Hypothesis, which is one of the models that most strongly argues that markets are efficient, a target of criticism. Because some of the most important assumptions of the Efficient Market Hypothesis are that investors are rational and that they cannot make excessive returns in any time period and cannot make any predictions about asset prices due to the absence of excessive price movements in financial markets. However, over time, empirical studies, especially in the field of psychology, have begun to prove that investors do not make rational decisions. Other studies in financial markets have also revealed that abnormal returns can be achieved in the markets, asset prices can be predicted in advance, and many anomalies have been found.

In this study, whether there are abnormal differences in the average returns of eight sub-sectors in the manufacturing sector according to the Public Disclosure Platform classification in the 2001, 2008 and 2019 (covid-19) crisis periods compared to the BIST average return is examined within the days of the week effect. The starting point of the study is the effect of the three crisis periods one year before and one year after the emergence of the crises. In this respect, it differs from other studies and contributes to other studies in the literature with its results. In the first part of the study, conceptual foundations, in the second part, the studies on the day of the week anomaly in the literature and in the third part, the application of the Borsa Istanbul manufacturing sector are given.

EFFICIENT MARKET HYPOTHESIS

Conceptually Efficient Market Hypothesis

According to Fama, if the information reaching the financial markets is fully reflected in the prices of securities, that market will be considered efficient. Therefore, each information directly affects the prices of financial assets. However, while the issue of pricing all information in an efficient market is quite broad, the empirical test of how and how long this pricing takes place is a relatively difficult process. Therefore, a better understanding of how prices are determined is necessary for measurements to be possible and to provide reliable results. In this section, we will analyse the forms of market efficiency and price formation processes, including Random Walk, Fair Game and Fair Game, which are related to the forms of market efficiency and which are mentioned by Fama in his 1970 study. Submartingale models will be mentioned (Fama and French, 1998: 25).

Random Walk Model:

The aim of this model is to determine the movements of pricing. However, as a result of this study, Kendall realised that the price series were formed by randomly selected numbers. After this situation, this type of processes followed by the prices were referred to as Random Walk (Konuralp, 2005: 34). The Random Walk Hypothesis states that stock prices do not follow a certain path, that prices are formed randomly, and that they exhibit movements independent of past price movements. As a matter of fact, since the factor that determines the prices of stocks in an efficient market is the information entering the market, past prices will not have any effect on new pricing (Önderoğlu, 1993: 41).Adil Oyun (Fair Game):

The methods of empirical studies on market efficiency did not include much detail until Fama's study in 1970. According to most of the studies conducted until then, market equilibrium formations depend on the expected return. However, the return equilibrium of a financial asset is also a function of its risk. In addition to its different definitions and representations, the concept of risk is shown in expected return models as follows (Aliyev, 2016: 51).

In the formula

- E (rj , t+1): Expected return

- E (rj , t+1 | θt): Equilibrium level of expected return

- pjt : price of financial asset j at time t

- Pj,t + 1 : Price of financial asset j at time t+1

- θt : The information set that is assumed to be fully reflected in the price of the financial asset at time However, considering the information set θt alone in price formation is empirically objectionable since it excludes the possibility of trading systems. Naturally, this will not be valid if the equilibrium expected return is lower than the expected return (Kıyılar, 1998: 34). The Ordinary Game model explains that the current price reflects the information and expectations in the market; therefore, no above-average gain can be obtained. Therefore, in such a situation, no one will be able to gain more than the other and financial markets will be "fair game" by definition.

The Submartingale Model:

Originated in 18th century France, the Submartingale model is a model derived from betting strategies in gambling games. According to this model, if the amount of money twice the amount of money lost is put back on the table for betting every time there is a loss, the first return (expected profit) gained in this chain will be equal to the first amount lost or more (submartinglale). The relevant equation is as follows (Çelik, 2007: 58).

In this equation, Pj , t denotes the price series of the financial asset and θt denotes the information set. If the financial assets in question reflect the information available in this information set in their prices, it can be said that the Submartingale process exists. This means that the expected value of the next period's price is equal to or higher than the current price. According to the above formula, if equality exists, the price series will follow the submartingale process. However, the gain from trading based on this type of information set will not be more than the "buy-and-hold" strategy for financial assets (Fama and French, 1998: 27).

Efficient Market Forms

Weak Form Market Efficiency

The weak form of market efficiency is both the oldest version of the EMR and is recognised as the starting level. In the weak form of market efficiency, prices of financial assets include all past information and also fully reflect all new information in current prices. Therefore, it is impossible to make excessive profits in this market due to the ease of access to past information. However, if there is an opportunity to make excessive profits in line with past prices, the market is inefficient in the weak form (Berk, 2005: 428). The weak form of the market reflects all past price fluctuations in the price. Since the weak form market cannot make future

price forecasts with past price movements, random behaviour is in question. Therefore, long-term analyses are not possible (Maymin, 2011: 2)

Semi-Strong Form Market Efficiency

Semi-strong market efficiency is defined as the situation where all publicly available information is reflected in market prices. This market efficiency also includes the weak form of market efficiency (Fama and French, 1998: 29). Semi-strong market efficiency includes information that is publicly available outside the market (capital increases, dividend yields, economic and political news, etc.) in addition to the securities-based information covered by weak form market efficiency. In such markets, it is possible for investors with insider information to have privileged information. It is possible for these investors to make above-average gains by utilising information that is not available to the public (Frank, 2011: 198). In order for a market to be efficient in a semi-strong form, stock prices should objectively reflect the information available to the public and accessible to everyone. This information is important for analyses on stocks (Akerlof, 1970: 488).

Strong Form Market Efficiency

The last form of the EPH is the strong form market efficiency. According to this market efficiency, all public information and all company-specific private information are reflected in security prices and therefore security prices are formed in line with this information. However, it is difficult to identify the profiles of investors who have access to this information. Investor profiles in these markets generally consist of company shareholders and managers. These individuals are able to carry out trading transactions on the securities they hold in the light of all information. In strong form markets, no investor can accurately predict the prices of securities. Therefore, there is no excessive profit in these markets (Fama and French, 1998: 31).

Anomalies within the Scope of Efficient Market Hypothesis

According to the Efficient Market Hypothesis, financial markets are efficient and it is impossible to achieve excess returns continuously. In some of the studies conducted to test the validity of this assumption, it has been observed that stock returns deviate from the averages continuously for some time periods. These deviations are defined in the literature as "anomaly", which means disorder or anomaly in English. Thaler defines "anomaly" as unusual movements that are contrary to the theory and incompatible with known rules. Anomalies are also mentioned in the EPH. According to the EPH, the reason for the excess returns defined as anomalies is systematic risks and therefore these excess returns should not be attributed importance (Thaler, 1987: 200).

Three types of anomalies are observed in financial markets. These are "firm anomalies", "price anomalies" and "calendar anomalies". While excessive returns observed continuously in certain time periods are analysed under the heading of calendar anomalies, the deviation from market efficiency with excessive and low reactions is defined as price anomaly (Shleifer, 2000: 35).

ANOMALIES OF THE WEEK WITHIN THE FRAMEWORK OF EFFICIENT

MARKET HYPOTHESIS

Gibbons and Hess (1981) used Dow Jones 30 data from July 1962 to December 1978 and found that there were negative returns for Mondays. Jaffe and Westerfield, who analysed the US, Australian, UK, Japanese and Canadian stock markets with regression analysis, found the Day of the Week Effect in all four countries; they stated that the lowest returns in the Australian and Japanese stock markets were on Tuesday, while the lowest returns in the US, Canadian and UK stock markets were on Monday. The highest returns differed in each country; the highest returns were observed on Wednesday in the USA, Tuesday in Australia, Saturday in Japan, Saturday in Japan, and Friday in the UK and Canada. They also stated that the weekend effect is

observed in countries other than the USA independently of the USA (Gibbonss and Hess, 1981: 579). Barone (1990) analysed the Weekend Effect in Milan Stock Exchange with the Least Squares Method in 3 sub-periods with 1975-1989 data and found evidence of negative returns on Mondays and positive returns on Fridays. However, it was observed that Tuesdays provided negative average returns in all 3 sub-periods (Barone, 1990: 484). Choudhry, who analysed seven emerging Asian stock markets with the GARCH model for the periods between 1990 and 1995, found a significant negative Monday effect in Indonesia, Malaysia and Thailand, while Tuesday returns in Korea, Taiwan and Thailand are significantly negatively differentiated from other days. This study was also of particular importance in terms of showing that the Day of the Week Effect does not only exist in the US stock markets (Choudhry, 2000: 236). Berument and Kıymaz (2001) analysed 6,409 S&P 500 daily closing data between January 1973 and November 1997 with the least squares method and GARCH model and found that the highest returns were on Wednesdays and the lowest returns were on Mondays (Berument and Kıymaz, 2001: 182). Abdioğlu and Değirmenci (2013) analysed the daily closing values of the ISE 100 index between 2003 and 2012 by regression analysis in three different periods as pre-crisis period, crisis period and post-crisis period; accordingly, the years 2003-2007, which were determined as the pre-crisis period, provided negative average returns on Mondays and positive average returns on Fridays. On the other hand, for the periods after 2008, no significant findings were found for Mondays and Fridays, while Tuesday provided a significant positive return (Abdioğlu and Değirmenci, 2013: 57).

DAYS OF THE WEEK ANOMALY STOCK EXCHANGE ISTANBUL APPLICATION

Purpose

This research aims to test whether there is a days of the week anomaly in Borsa Istanbul in the specified period intervals. Another aim of the study is to contribute to the research on this subject by adding the Covid-19 period in addition to the 2001 and 2008 crisis effects in Borsa Istanbul.

Method and Methodology

In our research, the daily closing prices of the stocks traded in Borsa Istanbul and included in the manufacturing sector according to the Public Disclosure Platform (KAP) classification and the daily closing values of the Borsa Istanbul index were used. The days of the week effect is investigated by analysing approximately one year before and one year after the emergence dates of the crises of the three crisis periods in our country. For the 2001 crisis period; the period between 05.01.2000-31.01.2001 was accepted as the pre-crisis period and the period between 01.02.2001-31.12.2001 was accepted as the post-crisis period. For the 2008 crisis period; the period between 03.09.2007-12.09.2008 is considered as the pre-crisis period and the period between 15.09.2008-28.08.2009 is considered as the post-crisis period. For the Covid-19 crisis period; 02.07.2019-13.03.2020 is considered as the pre-crisis period and 16.03.2020-12.03.2021 is considered as the post-crisis period.

The data of the research were obtained from the Public Disclosure Platform (KAP), the official website of Borsa Istanbul and the database of IS Investment financial institution. OLS method and regression analysis with dummy variables were preferred in data analysis. The daily rates of return of the stocks of seven sub-sectors in the manufacturing sector and the Borsa Istanbul Index in the determined periods were calculated with the help of the formula below.

$R_{i,t} = (P_{i,t} / P_{i,t-1})$ (1)
R_i, = return of i stock/BIST on day t
$P_{i,t}$ = i is the closing price of the stock/BIST on day t.

The difference of the daily rate of return of each stock is taken from the rate of return of Borsa Istanbul on the same day. Subsequently, the average returns of these stocks on the same day are calculated. The daily

average rates of return were used as the dependent variable in the regression equation. The dependent variables obtained from the data sets were regressed with the help of the following equation. Days of the week are used as independent variables. A dummy variable is assigned for each day. In order to avoid the dummy variable trap, Wednesday is not included in the regression model.

Yt=c+ ß2xD(Monday)+ß3xD(Tuesday)+ ß4xD(Thursday)+ ß5xD(Friday) (2)

In this equation, Yt is the rate of return at time t and D values are the dummy variables defined for each trading day in the stock exchange. Here, the dummy value D(Monday) defined for Monday takes the value 1 for Monday, the relevant day, and takes the value 0 for the other days, and this method is applied for all other trading days.

The Dickey Fuller test, which is one of the unit root tests within the framework of ADF tests, was used to determine whether the dependent variables obtained in the research are stationary or not, based on regressions without constant and trend and with constant and trend. The Durbin-Watson test is used to determine whether the error terms of the multiple regression analyses are correlated with each other and the F test is used to determine whether the error terms have constant variance. All statistical analyses were performed using Eviews software. The margin of error in the study was analysed at 1%, 5% and 10% levels.

Findings

In this section, the results of the multiple regression analysis conducted with the regression equation will be presented.

Table 1: Descriptive statistics of the differences between the daily rates of return of stocks traded in eight sub-sectors in the manufacturing sector and the BIST (Borsa Istanbul Index) general rates of return.

	AMS						GİT	
	2001 Crisis Period		2008 Crisis Period		Covid Period		2001 Crisis Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,000	0,001	0,000	0,000	0,003	0,003	0,000	0,002
Maximum	0,079	0,057	0,027	0,053	0,067	0,077	0,107	0,097
Minimum	-0,037	-0,069	-0,048	-0,043	-0,142	-0,102	-0,068	-0,074
Std. Dev.	0,017	0,017	0,011	0,014	0,024	0,026	0,020	0,022
Observations	267	226	263	238	176	249	267	226
	GİT				KKÜ			
	2008 Crisis Period		Covid Period		2001 Crisis Period		2008 Crisis Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,000	0,000	0,003	0,004	0,002	0,000	0,000	0,000
Maximum	0,043	0,037	0,111	0,085	0,065	0,061	0,041	0,063
Minimum	-0,049	-0,048	-0,107	-0,084	-0,079	-0,109	-0,055	-0,069
Std. Dev.	0,012	0,016	0,024	0,025	0,023	0,024	0,013	0,020
Observations	263	238	176	249	267	226	263	238
	KKÜ		KİPL					
	Covid Period		2001 Crisis Period		2008 Crisis Period		Covid Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,004	0,003	0,001	0,001	0,001	-0,001	0,002	0,005
Maximum	0,068	0,106	0,083	0,045	0,030	0,037	0,060	0,099
Minimum	-0,135	-0,093	-0,035	-0,081	-0,043	-0,044	-0,095	-0,082
Std. Dev.	0,024	0,025	0,016	0,015	0,012	0,014	0,020	0,024
Observations	176	249	267	226	263	238	176	249
	OM						MMEC	
	2001 Crisis Period		2008 Crisis Period		Covid Period		2001 Crisis Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,001	0,001	-0,001	0,001	0,004	0,004	0,000	0,001

Maximum	0,129	0,151	0,045	0,134	0,076	0,093	0,092	0,045
Minimum	-0,077	-0,122	-0,053	-0,074	-0,136	-0,122	-0,058	-0,067
Std. Dev.	0,029	0,035	0,017	0,028	0,028	0,033	0,016	0,015
Observations	267	226	263	238	176	249	267	226
	MMEC				TGD			
	2008 Crisis Period		Covid Period		2001 Crisis Period		2008 Crisis Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,000	0,000	0,002	0,004	0,002	0,001	0,000	0,001
Maximum	0,031	0,037	0,059	0,092	0,094	0,064	0,048	0,077
Minimum	-0,045	-0,051	-0,140	-0,110	-0,070	-0,068	-0,049	-0,048
Std. Dev.	0,012	0,014	0,023	0,025	0,020	0,022	0,013	0,018
Observations	263	238	176	249	267	226	263	238
	TGD		TTD					
	Covid Period		2001 Crisis Period		2008 Crisis Period		Covid Period	
	Before	After	Before	After	Before	After	Before	After
Mean	0,002	0,004	0,002	0,000	0,000	0,000	0,001	0,005
Maximum	0,061	0,098	0,106	0,051	0,035	0,044	0,065	0,085
Minimum	-0,161	-0,082	-0,057	-0,098	-0,052	-0,047	-0,121	-0,111
Std. Dev.	0,025	0,025	0,021	0,019	0,013	0,016	0,024	0,027
Observations	176	249	267	226	263	238	176	249

AMS: Basic Metal Industry, GIT: Food, Beverages and Tobacco, KKÜ: Paper and Paper Products, Printing and Publishing, KİPL: Chemicals, Pharmaceuticals, Petroleum and Rubber Products, MMEC: Metal Goods, Machinery, Electrical Equipment and Transport Vehicles, OM: Forestry Products and Furniture, TTD: Stone and Soil Based, TGD: Textiles, Clothing and Leather.

When Table 1 is analysed, it is seen that the average rate of return in the Basic Metal Industry sector is the highest in the post-Covid period with 0.003 and the lowest in the pre-crisis period with 0.000. It is observed that the volatility among the average rates of return is the highest in the post-Covid period with 0.026 and the lowest in the pre-crisis period with 0.011. In the Food, Beverages and Tobacco sector, the average rate of return is highest in the post-Covid period with 0.004 and lowest in the pre-crisis 2001, pre-crisis 2008 and post-crisis 2008 periods with 0.000. The volatility among average rates of return is highest in the post-Covid period with 0.025 and lowest in the pre-crisis period with 0.012. In the Paper and Paper Products sector, the average rate of return is highest in the pre-Covid period with 0.004 and lowest in the post-2001 crisis, pre-crisis and post-2008 crisis periods with 0.000. The volatility among average rates of return is highest in the post-Covid period with 0.025 and lowest in the pre-crisis period with 0.013. In the Chemicals, Pharmaceuticals, Petroleum, Rubber and Plastic Products sector, the highest average rate of return was in the post-Covid period with 0.005 and the lowest was in the post-2008 crisis period with -0.001. The volatility among average rates of return is highest in the post-Covid period with 0.024 and lowest in the pre-crisis period with 0.012. In the Metal Goods Machinery Electrical Equipment and Transport Vehicles sector, the highest average rate of return is observed in the post-Covid period with 0.004 and the lowest in the pre-crisis period of 2001, pre-crisis period of 2008 and post-crisis period of 2008 with 0.000. The volatility among average rates of return is highest in the post-Covid period with 0.025 and lowest in the pre-crisis period of 2008 with 0.012. In the Forestry Products and Furniture sector, the average rate of return is highest in the pre-Covid and post-Covid period with 0.004 and lowest in the pre-crisis period of 2008 with -0.001. The volatility among average rates of return is highest in the post-Covid period with 0.033 and lowest in the pre-crisis period with 0.017. In the Stone and Soil Based sector, the highest average rate of return is observed in the post-Covid period with 0.005 and the lowest in the post-2001 crisis, pre-crisis and post-2008 crisis periods with 0.000. The volatility among average rates of return is highest in the post-Covid period with 0.027 and lowest in the pre-crisis period with 0.013. In the Textile, Apparel and Leather sector, the highest average rate of return was in the post-Covid period with 0.004 and the lowest was in the pre-crisis period with 0.000. The volatility among average rates of return is highest in the pre-Covid and post-Covid period with 0.025 and lowest in the pre-crisis period with 0.013.

Table 2: Stationarity test results for the differences between the daily rates of return of stocks traded in eight sub-sectors in the manufacturing sector and the BIST (Borsa Istanbul Index) general rates of return

Test Type		AMS						GİD	
		2001 Crisis Period		2008 Crisis Period		Covid Period		2001 Crisis Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-141.461	-139.130	-67.431	-99.380	-146.231	-230.103	-140.088	-87.798
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-143.645	-138.820	-68.583	-99.396	-145.889	-142.488	-140.047	-80.112
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
		GİD				KKÜ			
		2008 Crisis Period		Covid Period		2001 Crisis Period		2008 Crisis Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-141.168	-148.052	-78.228	-47.946	-95.696	-149.269	-164.187	-102.867
	Prob.	0.000	0.000	0.000	0.0001	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-140.904	-147.800	-78.238	-189.823	-95.504	-149.083	-164.235	-103.667
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
		KKÜ		KİPL					
		Covid Period		2001 Crisis Period		2008 Crisis Period		Covid Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-75.262	-212.826	-132.073	-146.019	-130.975	-152.097	-233.394	-219.855
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-75.080	-218.496	-131.473	-145.707	-130.724	-151.790	-233.869	-222.948
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
		MMEC						OM	
		2001 Crisis Period		2008 Crisis Period		Covid Period		2001 Crisis Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-144.714	-64.605	-101.712	-74.546	-251.674	-223.532	-102.235	-97.734
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-144.403	-66.108	-106.215	-74.726	-251.217	-142.872	-101.918	-97.779
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
		OM				TTD			
		2008 Crisis Period		Covid Period		2001 Crisis Period		2008 Crisis Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-147.269	-103.216	-201.259	-189.571	-139.603	-157.557	-148.723	-163.875
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-147.443	-104.101	-201.230	-191.552	-139.663	-157.216	-148.638	-163.680
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
		TTD		TGD					
		Covid Period		2001 Crisis Period		2008 Crisis Period		Covid Period	
		Before	After	Before	After	Before	After	Before	After
Fixed	t-Statistic	-239.028	-144.692	-144.341	-145.940	-151.734	-146.156	-80.252	-214.056
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***
Fixed Trendy	t-Statistic	-239.080	-147.896	-144.359	-145.796	-152.012	-145.900	-80.134	-216.753
	Prob.	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		***	***	***	***	***	***	***	***

***p<0.01, **p<0.05 and *p<0.10. AMS: Basic Metal Industry, F&B: Food, Beverages and Tobacco, PPP: Paper and Paper Products, Printing and Publishing, KIPL: Chemicals, Pharmaceuticals, Petroleum and Rubber Products, MMEC: Metal Goods, Machinery, Electrical Equipment and Transport Vehicles, OM: Forestry Products and Furniture, TTD: Stone and Soil Based, TGD: Textiles, Clothing and Leather.

Table 2 shows the results of the ADF unit root test for the differences between the daily rates of return of food, beverages and tobacco, textile clothing and leather, forest products and furniture, paper, paper products and printing industry, chemicals, pharmaceuticals, petroleum, rubber and plastic products, stone and soil based industry, basic metal industry and metal goods, machinery, electrical appliances and transport vehicles sectors measured in the periods before and after the 2001 crisis, before and after the 2008 crisis and before and after the covid-19 crisis. According to the test findings, the differences between the daily rates of return of the sectors measured in these periods are statistically stationary as they do not contain unit root within the framework of ADF tests based on regressions with constant and trend-free and with constant and trend, respectively.

Table 3 shows the results of the multiple regression model summary, Durbin-Watson test and F test, which is one of the tests of changing variance, where the differences between the daily rates of return of food, beverages and tobacco, textile clothing and leather, forest products and furniture, paper, paper products and printing industry, chemicals, pharmaceuticals, petroleum, rubber and plastic products, stone and soil based industry, basic metal industry and metal goods, machinery, electrical appliances and transportation vehicles sectors measured in the pre- and post-Covid crisis periods of 2001, 2008 and Covid crisis periods are used as dependent and weekdays as independent variables.

Table 3: Summary, Durbin-Watson test and F test results of the multiple regression model in which the differences between the daily rates of return of the stocks traded in eight sub-sectors in the manufacturing sector and the BIST (Borsa Istanbul Index) general rates of return are used as the dependent variable

Variable	Time		R	Durbin-Watson	F test	
					F	P
AMS	2001 crisis period	Before	0,023	1,943	1,029	0,389
		After	0,027	1,354	0,875	0,475
	2008 crisis period	Before	0,044	2,007	0,984	0,417
		After	0,046	1,995	0,914	0,457
	Covid period	Before	0,018	1,738	1,060	0,372
		After	0,013	1,954	1,407	0,232
GİT	2001 crisis period	Before	0,039	1,985	1,047	0,383
		After	0,012	1,972	0,410	0,802
	2008 crisis period	Before	0,038	1,998	1,518	0,197
		After	0,052	1,983	1,819	0,126
	Covid period	Before	0,010	1,895	0,486	0,746
		After	0,017	1,963	1,353	0,251
KKÜ	2001 crisis period	Before	0,022	1,967	0,430	0,787
		After	0,031	1,995	0.568	0,416
	2008 crisis period	Before	0,005	1,998	1.230	0,298
		After	0,039	1,988	0,913	0,457
	Covid period	Before	0,024	1,824	1,694	0,153
		After	0,008	2,002	1,009	0,403
KİPL	2001 crisis period	Before	0,012	1,899	1,289	0,274
		After	0,015	1,994	0,449	0,773
	2008 crisis period	Before	0.023	2,005	1,144	0,336
		After	0,020	1,994	1,542	0,191

	Covid period	Before	0,015	1,873	0,585	0,674
		After	0,003	1,956	0,681	0,606
MMEC	2001 crisis period	Before	0,029	1,987	0,447	0,775
		After	0,014	1,921	0,335	0,854
	2008 crisis period	Before	0,022	1,810	0,842	0,499
		After	0,082	1,843	0,789	0,534
	Covid period	Before	0,011	2,358	1,090	0,363
		After	0,009	1,946	1,753	0,139
OM	2001 crisis period	Before	0,015	2,090	0,195	0,941
		After	0,042	2,153	1,259	0,287
	2008 crisis period	Before	0,040	1,881	0,224	0,925
		After	0,022	2,051	2,296	0,140
	Covid period	Before	0,012	2,110	0,822	0,513
		After	0,020	2,210	1,262	0,285
TTD	2001 crisis period	Before	0,007	1,877	1,888	0,113
		After	0,014	1,863	1,605	0,174
	2008 crisis period	Before	0,029	1,862	0,434	0,784
		After	0,025	2,070	0,990	0,414
	Covid period	Before	0,013	1,819	1,407	0,234
		After	0,013	1,958	1,832	0,123
TGD	2001 crisis period	Before	0,031	1,864	0,465	0,762
		After	0,014	1,806	0,426	0,790
	2008 crisis period	Before	0,025	1,948	0,671	0,612
		After	0,016	1,839	0,727	0,574
	Covid period	Before	0,030	2,169	1,095	0,361
		After	0,014	1,948	1,212	0,306

FBS: Food, beverages and tobacco, TGD: Textiles, clothing and leather, OM: Forestry products and furniture, PPP: Paper, paper products and printing industry, CPL: Chemicals, pharmaceuticals, petroleum, rubber and plastic products, TTD: Stone and soil based, AMS: Basic metal industry, MMEC: Metal goods, machinery, electrical appliances and transport equipment.

It is observed that the independent variables explain 2.3%, 2.7%, 4.4%, 4.6%, 1.8% and 1.3% of the change in the differences between daily rates of return in the Basic Metal Industry sector in the crisis periods before and after 2001, before and after 2008 and before and after Covid, respectively, and the error terms of the models are constant variance and uncorrelated with each other. In the Food, Beverages and Tobacco sector, the independent variables explain 3.9%, 1.2%, 3.8%, 5.2%, 1.0% and 1.7% of the change in the differences between daily rates of return in the pre- and post-2001, pre- and post-2008, and pre and post-Covid crisis periods, respectively, and the error terms of the models are constant variance and not correlated with each other. In the Paper and Paper Products, Printing and Publishing sector, the independent variables explain 2.2%, 3.1%, 0.5%, 3.9%, 2.4% and 0.8% of the change in the differences between daily rates of return in the pre- and post-2001, pre- and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the established models are constant variance and not correlated with each other. In the Chemicals, Pharmaceuticals, Petroleum, Rubber and Plastic Products sector, the independent variables explain 1.2%, 1.5%, 2.3%, 2.0%, 1.5% and 0.3% of the change in the differences between daily rates of return in the pre- and post-2001, pre- and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the established models are constant variance and not correlated with each other. It is observed that the

independent variables explain 2.9%, 1.4%, 2.2%, 8.2%, 1.1% and 0.9% of the change in the differences between daily rates of return in the Metal Goods Machinery Electrical Equipment and Transportation Vehicles sector in the pre- and post-2001, pre- and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the established models are constant variance and not correlated with each other. In the Forestry Products and Furniture sector, the independent variables explain 1.5%, 4.2%, 4.0%, 2.2%, 1.2% and 2.0% of the change in the differences between daily rates of return in the pre- and post-2001, pre- and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the established models are constant variance and not correlated with each other. The independent variables explain 0.7%, 1.4%, 2.9%, 2.5%, 1.3% and 1.3% of the change in the differences between the daily rates of return in the Stone and Soil Based sector in the pre- and post-2001, pre- and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the models are constant variance and not correlated with each other. It is observed that the independent variables explain 3.1%, 1.4%, 2.5%, 1.6%, 3.0% and 1.4% of the change in the differences between daily rates of return in the Textile, Apparel and Leather sector in the pre- and post-2001, pre and post-2008 and pre and post-Covid crisis periods, respectively, and the error terms of the established models have constant variance and are not correlated with each other.

Table 4: Multiple regression model analysis results using the differences between the daily return rates of the stocks of the basic metal industry sector and the general return rates of BIST (Borsa Istanbul Index) as the dependent variable

Sector	**Time**		**independent variables**	β	**SH**	**t**	**p**
BASIC METAL INDUSTRY	2001 Crisis Period	Before	Monday	-0,001	0,003	-0,439	0,661
			Tuesday	-0,004	0,003	-1,307	0,192
			Thursday	0,004	0,003	1,108	0,269
			Friday	-0,001	0,003	-0,253	0,800
		After	Monday	0,008	0,004	2,373**	**0,019**
			Tuesday	0,004	0,003	1,119	0,264
			Thursday	0,002	0,003	0,508	0,612
			Friday	0,002	0,003	0,544	0,587
	2008 Crisis Period	Before	Monday	0,002	0,002	1,082	0,280
			Tuesday	0,005	0,002	1,929*	**0,055**
			Thursday	0,007	0,002	3,136***	**0,002**
			Friday	0,002	0,002	0,870	0,385
		After	Monday	0,004	0,003	1,470	0,143
			Tuesday	0,007	0,003	2,707***	**0,007**
			Thursday	-0,001	0,003	-0,373	0,709
			Friday	0,001	0,003	0,362	0,718
	Covid Period	Before	Monday	-0,003	0,005	-0,511	0,610
			Tuesday	-0,008	0,005	-1,544	0,124
			Thursday	-0,002	0,005	-0,439	0,662
			Friday	-0,008	0,006	-1,405	0,162
		After	Monday	-0,005	0,005	-1,009	0,314
			Tuesday	0,002	0,007	0,340	0,734
			Thursday	0,003	0,005	0,644	0,520
			Friday	-0,002	0,004	-0,541	0,589

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 4 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the basic metal industry sector measured in the periods before and after the 2001 crisis, before and after the 2008 crisis and before and after the Covid-19 crisis and the BIST (Borsa Istanbul Index) general rates of return, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Monday has a statistically significant effect on the dependent variable for the post-crisis period of 2001. In addition, in the pre-crisis period of 2008, Tuesday and Thursday have a statistically significant effect on the dependent variable. Another finding is that Tuesdays have a statistically significant effect on the dependent variable in the post-2008 crisis period.

According to the regression coefficients, in the basic metal industry sector, the sector-BIST return spread is significantly higher on Mondays in the post-2001 crisis period. In the pre-crisis period of 2008, the sector-BIST return spread is 0.5% higher at 10% significance level and 0.7% higher on Thursdays at 1% significance level. Finally, the sector-BIST return spread in this sector was 0.7% higher on Tuesdays at the 1% significance level in the post-2008 crisis period.

Table 5: Multiple regression model analysis results using the differences between the daily return rates of the stocks of the food, beverage and tobacco sector and the general return rates of the BIST (Borsa Istanbul Index) as the dependent variable

Sector	**Time**		**independent variables**	β	**SH**	**t**	**p**
FOOD, BEVERAGE AND TOBACCO	2001 Crisis Period	Before	Monday	0,010	0,004	2.71***	**0,007**
			Tuesday	0,003	0,004	0,840	0,402
			Thursday	0,011	0,004	2.483**	**0,014**
			Friday	0,006	0,003	1.787*	**0,075**
		After	Monday	0,003	0,005	0,625	0,533
			Tuesday	0,002	0,005	0,356	0,722
			Thursday	-0,003	0,004	-0,690	0,491
			Friday	-0,003	0,005	-0,620	0,536
	2008 Crisis Period	Before	Monday	0,006	0,002	2.388**	**0,018**
			Tuesday	0,004	0,003	1,577	0,116
			Thursday	0,007	0,002	2.945***	**0,004**
			Friday	0,004	0,002	1,553	0,122
		After	Monday	0,007	0,003	2.28**	**0,024**
			Tuesday	0,005	0,003	1.812*	**0,071**
			Thursday	-0,003	0,003	-0,942	0,347
			Friday	0,002	0,003	0,544	0,587
	Covid Period	Before	Monday	0,002	0,005	0,342	0,733
			Tuesday	-0,005	0,005	-1,074	0,284
			Thursday	-0,001	0,006	-0,198	0,843
			Friday	-0,003	0,005	-0,595	0,553
		After	Monday	-0,002	0,005	-0,402	0,688
			Tuesday	0,008	0,005	1,457	0,146
			Thursday	0,000	0,005	0,092	0,927
			Friday	0,001	0,004	0,366	0,714

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 5 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the food, beverage and tobacco sector and the general rates of return of the BIST (Borsa Istanbul Index) measured in the periods before and after the 2001 crisis, before and after the 2008 crisis and before and after the Covid-19 crisis, using weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, for the pre-crisis period of 2001, Monday, Thursday and Friday have a statistically significant effect on the dependent variable. In addition, Monday and Thursday for the pre-crisis period of 2008 and Monday and Tuesday for the post-crisis period of 2008 have a statistically significant effect on the dependent variable. According to the regression coefficients, in the food, beverage and tobacco sector, the sector-BIST return spread is higher on Mondays by 1.0% at 1% significance level, on Thursdays by 1.1% at 5% significance level and on Fridays by 0.6% at 10% significance level in the pre-crisis period of 2001; in the pre-crisis period of 2008, the sector-BIST return spread is higher on Mondays by 0.6% at 5% significance level and on Thursdays by 0.7% at 1% significance level. Again, in the post-2008 crisis period, the sector-BIST return spread is 0.7% higher on Mondays at the 5% significance level and 0.5% higher on Tuesdays at the 10% significance level.

Table 6: Multiple regression model analysis results using the differences between the daily rates of return of the stocks of the paper and paper products, printing and publishing sector and the BIST (Borsa Istanbul Index) as the dependent variable.

Sector	**Time**		**independent variables**	β	**SH**	**t**	**p**
PAPER AND PAPER PRODUCTS, PRINTING AND PUBLISHING	2001 Crisis Period	Before	Monday	0,006	0,004	1,452	0,148
			Tuesday	-0,003	0,004	-0,731	0,465
			Thursday	0,004	0,005	0,831	0,407
			Friday	-0,001	0,005	-0,194	0,846
		After	Monday	0,007	0,005	1,476	0,141
			Tuesday	0,005	0,005	1,087	0,278
			Thursday	-0,005	0,005	-0,912	0,363
			Friday	0,001	0,005	0,215	0,830
	2008 Crisis Period	Before	Monday	0,001	0,003	0,488	0,626
			Tuesday	0,002	0,003	0,645	0,520
			Thursday	0,003	0,003	1,140	0,255
			Friday	0,002	0,003	0,580	0,563
		After	Monday	0,007	0,005	1,575	0,117
			Tuesday	0,009	0,004	2.549**	**0,011**
			Thursday	0,000	0,004	0,002	0,999
			Friday	0,006	0,004	1,470	0,143
	Covid Period	Before	Monday	0,008	0,005	1.661*	**0,098**
			Tuesday	-0,003	0,005	-0,623	0,534
			Thursday	0,000	0,005	-0,098	0,922
			Friday	-0,002	0,006	-0,334	0,739
		After	Monday	-0,001	0,005	-0,162	0,872

			Tuesday	0,005	0,006	0,774	0,440
			Thursday	0,001	0,005	0,121	0,904
			Friday	-0,002	0,004	-0,402	0,688

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 6 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the paper and paper products, printing and publishing sector and the BIST (Borsa Istanbul Index) general rates of return measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Tuesday has a statistically significant effect on the dependent variable in the post-crisis period of 2008 and Monday in the pre-crisis period of Covid-19.

According to the regression coefficients, in the paper and paper products, printing and publishing sector, the sector-BIST return difference was 0.9% on Tuesdays at 5% significance level in the post-crisis period of 2008 and 0.8% on Mondays at 10% significance level in the pre-crisis period of Covid-

Table 7: Multiple regression model analysis results using the differences between the daily rates of return of the stocks of the chemical, pharmaceutical, rubber, petroleum and plastic products sector and the BIST (Borsa Istanbul Index) as the dependent variable.

Sector	**Time**		**independent variables**	β	**SH**	**t**	**p**
CHEMICAL, PHARMACEUTICAL, PETROLEUM, TYRE AND PLASTIC PRODUCTS	2001 Crisis Period	Before	Monday	0,002	0,003	0,697	0,486
			Tuesday	-0,003	0,003	-0,828	0,409
			Thursday	0,000	0,003	-0,077	0,939
			Friday	0,001	0,003	0,289	0,773
		After	Monday	0,000	0,003	0,079	0,937
			Tuesday	0,001	0,003	0,361	0,718
			Thursday	-0,004	0,003	-1,364	0,174
			Friday	-0,002	0,003	-0,746	0,456
	2008 Crisis Period	Before	Monday	0,002	0,002	0,938	0,349
			Tuesday	-0,001	0,002	-0,338	0,736
			Thursday	0,004	0,002	1.983**	**0,048**
			Friday	0,002	0,002	1,012	0,312
		After	Monday	0,004	0,003	1,303	0,194
			Tuesday	0,003	0,003	1,018	0,310
			Thursday	-0,002	0,003	-0,584	0,560
			Friday	0,002	0,003	0,596	0,552
	Covid Period	Before	Monday	0,001	0,005	0,216	0,829
			Tuesday	-0,005	0,005	-1,017	0,310
			Thursday	-0,003	0,005	-0,551	0,582
			Friday	-0,005	0,005	-1,116	0,266
		After	Monday	-0,001	0,004	-0,249	0,804
			Tuesday	0,003	0,006	0,433	0,666
			Thursday	-0,001	0,005	-0,162	0,872
			Friday	0,001	0,004	0,166	0,868

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 7 shows the results of the multiple regression model analysis of the differences between the daily rates of return of the stocks of the chemical, pharmaceutical, rubber, petroleum and plastic products sector and the BIST (Borsa Istanbul Index) general rates of return measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods, with weekdays as the dependent variable and weekdays as the

independent variable. According to the test findings, Thursday has a statistically significant effect on the dependent variable in the pre-crisis period of 2008. According to the regression coefficients, in the chemical, pharmaceutical, rubber, petroleum and plastic products sector, it is measured that the sector-BIST return spread is 0.4% higher on Thursdays at 5% significance level in the pre-crisis period of 2008.

Table 8: Multiple regression model analysis results using the differences between the daily rates of return of the stocks of the metal goods, machinery, electrical appliances and transportation vehicles sector and the BIST (Borsa Istanbul Index) general rates of return as the dependent variable.

Sector	Time		independent variables	β	SH	t	p
METAL GOODS MACHINERY ELECTRICAL EQUIPMENT AND TRANSPORT VEHICLES	2001 Crisis Period	Before	Monday	0,000	0,003	0,138	0,891
			Tuesday	-0,003	0,003	-0,887	0,376
			Thursday	0,006	0,003	1.823*	**0,069**
			Friday	0,001	0,003	0,456	0,649
		After	Monday	0,002	0,003	0,734	0,464
			Tuesday	0,001	0,003	0,308	0,759
			Thursday	-0,001	0,003	-0,448	0,655
			Friday	-0,003	0,003	-0,873	0,384
	2008 Crisis Period	Before	Monday	0,001	0,002	0,606	0,545
			Tuesday	0,001	0,002	0,294	0,769
			Thursday	0,005	0,002	2.215**	**0,028**
			Friday	0,001	0,002	0,591	0,555
		After	Monday	0,008	0,003	2.894***	**0,004**
			Tuesday	0,005	0,003	1,587	0,114
			Thursday	-0,003	0,003	-1,224	0,222
			Friday	0,000	0,003	-0,121	0,904
	Covid Period	Before	Monday	0,003	0,005	0,669	0,504
			Tuesday	-0,003	0,005	-0,620	0,536
			Thursday	0,001	0,005	0,179	0,858
			Friday	-0,003	0,005	-0,509	0,612
		After	Monday	-0,002	0,004	-0,437	0,662
			Tuesday	0,005	0,007	0,698	0,486
			Thursday	0,000	0,005	0,031	0,975
			Friday	-0,001	0,004	-0,245	0,806

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 8 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the metal goods, machinery, electrical appliances and transportation vehicles sector and the BIST (Borsa Istanbul Index) general rates of return measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Thursday has a statistically significant effect on the dependent variable in the pre-crisis 2001 and pre-crisis 2008 periods. In addition, Monday has a statistically significant effect on the dependent variable in the post-crisis period of 2008.

According to the regression coefficients, it is observed that the sector-BIST return spread in the metal goods, machinery, electrical appliances and transport vehicles sector is higher by 0.6% on Thursdays at 10% significance level in the pre-crisis period of 2001, 0.5% on Thursdays at 5% significance level in the pre-crisis period of 2008 and 0.8% on Mondays at 1% significance level in the post-crisis period of 2008.

Table 9: Multiple regression model analysis results using the differences between the daily rates of return of the stocks of the forest products and furniture sector and the general rates of return of the BIST (Borsa Istanbul Index) as the dependent variable.

Sector	Time		independent variables	β	SH	t	p
FOREST PRODUCTS AND FURNITURE	2001 Crisis Period	Before	Monday	0,007	0,005	1,376	0,170
			Tuesday	0,004	0,006	0,6286	0,530
			Thursday	0,009	0,006	1,503	0,134
			Friday	0,009	0,006	1,491	0,137
		After	Monday	0,000	0,007	0,0156	0,988
			Tuesday	-0,010	0,006	-1,621	0,106
			Thursday	-0,017	0,008	-2.101**	**0,047**
			Friday	-0,015	0,007	-2.198**	**0,029**
	2008 Crisis Period	Before	Monday	0,007	0,003	2.023**	**0,044**
			Tuesday	0,009	0,003	2.826***	**0,005**
			Thursday	0,009	0,003	2.841***	**0,005**
			Friday	0,007	0,003	2.298**	**0,022**
		After	Monday	-0,010	0,006	-1,623	0,106
			Tuesday	-0,008	0,006	-1.231	0,220
			Thursday	-0,010	0,008	-1,262	0,208
			Friday	-0,002	0,006	-0,408	0,684
	Covid Period	Before	Monday	0,004	0,006	0,6266	0,532
			Tuesday	0,000	0,007	-0.041	0,968
			Thursday	0,000	0,006	-0,086	0,932
			Friday	-0,006	0,006	-0,924	0,357
		After	Monday	-0,011	0,006	-1.901*	**0,058**
			Tuesday	0,003	0,008	0,379	0,705
			Thursday	0,000	0,006	-0.059	0,952
			Friday	-0,004	0,006	-0.589	0,556

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 9 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the forest products and furniture sector measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods and the BIST (Borsa Istanbul Index) general rates of return, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Thursday and Friday have a statistically significant effect on the dependent variable in the post-crisis period of 2001. In addition, in the pre-crisis period of 2008, Monday, Tuesday, Thursday and Friday have a statistically significant effect on the dependent variable. Finally, Monday has a significant effect in the post-COVID-19 crisis period. According to the regression coefficients, in the forest products and furniture sector, in the post-crisis period of 2001, the sector-BIST return spread was lower on Thursdays by -0.7% at 5% significance level and on Fridays by -1.5% at 5% significance level. In addition, in the pre-crisis period of 2008, the sector-BIST return spread was 0.7% on Mondays and Fridays at 5% significance level and 0.9% on Tuesdays and Thursdays at 1% significance level. Finally, in the post-COVID-19 crisis period, it is observed that the sector-BIST return spread is lower on Mondays by -1.1% at the 10% significance level.

Table 10: Multiple regression model results using the differences between the daily rates of return of the stocks of the stone and soil based industry sector and the BIST (Borsa Istanbul Index) general rates of return as the dependent variable. Analysis

Sector	Time		independent variables	β	SH	t	p
STONE AND	2001 Crisis	Before	Monday	0,005	0,004	1,269	0,206

SOIL BASED	Period		Tuesday	0,001	0,004	0,228	0,820
			Thursday	0,003	0,005	0,732	0,465
			Friday	0,003	0,004	0,690	0,491
		After	Monday	-0,001	0,004	-0,267	0,790
			Tuesday	0,002	0,004	0,530	0,596
			Thursday	-0,003	0,004	-0,710	0,478
			Friday	-0,005	0,005	-1,025	0,306
	2008 Crisis Period	Before	Monday	0,003	0,003	1,026	0,306
			Tuesday	0,004	0,003	1,505	0,133
			Thursday	0,007	0,002	2.911***	**0,004**
			Friday	0,004	0,003	1,475	0,141
		After	Monday	0,007	0,003	2.368**	**0,019**
			Tuesday	0,003	0,003	0,861	0,390
			Thursday	0,000	0,003	0,145	0,885
			Friday	0,002	0,003	0,516	0,606
	Covid Period	Before	Monday	0,002	0,005	0,323	0,747
			Tuesday	-0,002	0,006	-0,266	0,790
			Thursday	-0,002	0,005	-0,443	0,658
			Friday	-0,006	0,005	-1,233	0,219
		After	Monday	0,001	0,005	0,243	0,808
			Tuesday	0,006	0,007	0,847	0,398
			Thursday	0,000	0,005	-0,022	0,982
			Friday	-0,004	0,005	-0,764	0,446

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 10 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the stone and soil-based industry sector and the BIST (Borsa Istanbul Index) general rates of return measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Thursday has a statistically significant effect on the dependent variable in the pre-crisis period of 2008 and Monday in the post-crisis period of 2008. According to the regression coefficients, it is observed that the sector-BIST return spread is 0.7% higher on Thursdays at 1% significance level in the pre-crisis period. Moreover, in the post-crisis period of 2008, the sector-BIST return spread is higher on Mondays by 0.7% at the 5% significance level.

Table 11: Multiple regression model analysis results using the differences between the daily rates of return of the stocks of the textile, clothing and leather sector and the general rates of return of the BIST (Borsa Istanbul Index) as the dependent variable.

Sector	**Time**		**independent variables**	β	**SH**	**t**	**p**
TEXTILES, CLOTHING AND LEATHER	2001 Crisis Period	Before	Monday	0,007	0,004	1.683*	**0,093**
			Tuesday	-0,004	0,004	-1,021	0,308
			Thursday	0,001	0,004	0,366	0,715
			Friday	0,003	0,004	0,921	0,358
		After	Monday	0,002	0,005	0,360	0,719
			Tuesday	0,004	0,005	0,907	0,365
			Thursday	-0,003	0,004	-0,821	0,412
			Friday	0,001	0,005	0,301	0,764
	2008 Crisis Period	Before	Monday	0,005	0,003	1.718*	**0,087**
			Tuesday	0,004	0,003	1,348	0,179
			Thursday	0,006	0,002	2.364**	**0,019**

			Friday	0,005	0,003	1,621	0,106
		After	Monday	0,003	0,004	0,731	0,465
			Tuesday	0,004	0,003	1,387	0,167
			Thursday	-0,002	0,004	-0,467	0,641
			Friday	-0,001	0,004	-0,259	0,796
	Covid Period	Before	Monday	0,003	0,005	0,641	0,522
			Tuesday	-0,005	0,005	-0,968	0,334
			Thursday	-0,005	0,005	-1,014	0,312
			Friday	-0,009	0,006	-1,558	0,121
		After	Monday	-0,002	0,004	-0,573	0,567
			Tuesday	0,006	0,006	1,015	0,311
			Thursday	0,000	0,005	-0,028	0,978
			Friday	0,000	0,004	-0,067	0,947

***p<0.01, **p<0.05, *p<0.10, β: Coefficients, SH: Standard error

Table 11 shows the results of the multiple regression model analyses of the differences between the daily rates of return of the stocks of the textile, apparel and leather sector measured in the pre- and post-2001, pre- and post-2008 and pre- and post-Covid-19 crisis periods and the BIST (Borsa Istanbul Index) general rates of return, with weekdays as the dependent variable and weekdays as the independent variable. According to the test findings, Monday has a statistically significant effect on the dependent variables in the pre-crisis 2001 and pre-crisis 2008 periods and Thursday in the pre-crisis 2008 period. According to the regression coefficients, the sector-BIST return spread is 0.7% higher on Mondays at 10% significance level in the pre-crisis period of 2001 and 0.5% higher on Mondays at 10% significance level in the pre-crisis period of 2008. In addition, it is observed that the sector-BIST return spread is higher on Thursdays by 0.6% at the 5% significance level in the pre-crisis period of 2008.

CONCLUSIONS, RECOMMENDATIONS AND LIMITATIONS

When we look at the findings that emerged as a result of the analyses made in terms of the periods considered in the research, for the basic metal industry sector; Mondays in the post-crisis period of 2001, Tuesdays and Thursdays in the pre-crisis period of 2008 and Tuesdays in the post-crisis period of 2008 showed a significant positive effect on the sector average rates of return-BIST return ratios. In the food, beverage and tobacco sector; Monday, Thursday and Friday in the pre-crisis period of 2001, Monday and Thursday in the pre-crisis period of 2008 and Monday and Tuesday in the post-crisis period of 2008 showed a significant positive effect on sector average rates of return-BIST return ratios. In the paper and paper products, printing and publishing sector, Tuesday in the post-2008 crisis period and Monday in the pre-covid-19 period had a significant positive effect on the sector average return rates-BIST return rates. In the chemicals, pharmaceuticals, rubber, petroleum and plastic products sector, the sector average rates of return on Thursdays in the pre-crisis period showed a significant positive effect on the sector average rates of return-BIST rates of return. In the metal goods, machinery, electrical appliances and transport vehicles sector; Thursday in the pre-crisis period before 2001, Thursday in the pre-crisis period before 2008 and Monday in the post-crisis period after 2008 had a significant positive effect on sector average rates of return-BIST return ratios. In the forestry products and furniture sector, Thursday and Friday in the post-2001 period and Monday in the post-COVID-19 period had a significant negative effect on sector average rates of return-BIST return ratios. In addition, in the pre-crisis period of 2008, Monday, Tuesday, Thursday and Friday had a significant positive effect on sector average rates of return - BIST rates of return. In the stone and soil based industry sector, Thursday in the pre-crisis period before the 2008 crisis and Monday in the post-crisis period had a significant positive effect on sector average rates of return-BIST rates of return. In the textile, clothing and leather sector, sector average rates of return on Mondays in the pre-crisis period before the 2001

crisis, Mondays in the pre-crisis period before the 2008 crisis and Thursdays in the post-crisis period showed a significant positive effect on the sector average rates of return-BIST return ratios.

The limitation of our research is that it covers only manufacturing sub-sectors and not other BIST sectors. In future studies, the research dimension can be extended to the BIST in general and whether other sectors provide abnormal returns can be analysed.

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