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Araştırma Makalesi (Research Article)

The Effect of Innovation on Financial Performance: A Research in BIST Manufacturing Sector

Seren AYDINGÜLÜ SAKALSIZ [1]
Filiz ÖZŞAHİN KOÇ [2]

Abstract

The study aims to research the effect of firms' innovation activities on financial performance. In this context, 2018-2022 data of 80 firms in the "BIST Manufacturing Sector" were analyzed using "panel data analysis" methods. As a consequence of the analysis, it was noted that the R&D expenses of the firms did not have a statistically significant effect on financial performance. However, while intangible assets have a negative impact on return on assets, it was found to have a positive impact on return on equity. Within this scope, it is expected that investments and expenses made in innovation activities will have significant effects on financial performance in the long term.

Keywords: Innovation, Financial Performance, Panel Data Analysis.

JEL Codes: M40, M41, Q56.

İnovasyonun Finansal Performansa Etkisi: BIST İmalat Sektöründe Bir İnceleme

Öz

Bu çalışmada firmaların inovasyon faaliyetlerinin finansal performansa olan etkisini araştırmak amaçlanmaktadır. Bu bağlamda, "BIST İmalat Sektöründe" yer alan 80 firmanın 2018-2022 yılları verisi panel veri analizi yöntemleri kullanılarak analiz edilmiştir. Analizler neticesinde firmaların Ar-Ge giderlerinin, finansal performans üzerinde istatistiksel olarak anlamlı bir etkisi olmadığı belirlenmiştir. Ancak maddi olmayan duran varlıkların aktif karlılık üzerinde negatif yönlü bir etkisi bulunurken, öz kaynak karlılığı üzerinde pozitif yönlü etkisi olduğu saptanmıştır. Bu bağlamda inovasyon faaliyetlerine yapılan yatırım ve harcamaların uzun vadede finansal performans üzerinde ciddi etkileri olacağı düşünülmektedir.

Anahtar Sözcükler: İnovasyon, Finansal Performans, Panel Veri Analizi.

JEL Kodları: M40, M41, Q56.

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1. INTRODUCTION

For companies to achieve their fundamental objectives such as growth, profitability, continuity, and sustainability, and to compete in global markets, they need to prioritize innovation activities and continually renew themselves in areas such as products, processes, and technologies. Companies that fail to keep up with the requirements of the era and adapt to innovations cannot succeed. In the most general sense, innovation can be expressed as a concept that includes processes such as developing a different product or improving the quality of the existing product, a new process in production, discovering a new market, developing new perspectives in production inputs and enriching the organization in production (Aslan and Aygün, 2019: 92). In this context, investments made in innovation activities are evaluated to have positive contributions to companies' financial performance (FP). R&D activities are the innovation methods that companies use to allocate resources and keep their products and services constantly responding to the needs and in line with their goals of getting ahead in the competition (Tekin Turhan, 2021: 47). Investments are made within the scope of R&D activities to develop new products, processes, and technologies, this provides companies with access to new markets and contributes to the improvement of the firm's financial performance by gaining a competitive advantage. Factors that may affect the financial performance of firms include firm size, export performance, market share, capacity utilization rate, sales growth rate, and R&D activities. Because firms with relatively high expenses for R&D activities can reach high profitability after a certain period of time (Akgüç, 2010: 79). Because with the increase in R&D activities, the productivity of employees will be increased, new products and systems will be developed and the capacity utilization rate will increase, increasing profitability. Understanding the impact of innovation on the financial performance of firms is crucial both from an academic and practical perspective. In this study, the impact of innovation on the financial performance of firms will be discussed from theoretical and empirical perspectives.

Studies examining the effect of innovation activities on financial performance (FP) in the national and international literature include "Büyükipekçi and Öztürk (2023); Lehenchuk et al., (2023); Sandal and Gacar (2021); Gültekin and Onuk (2020); Aslan and Aygün (2019); Aytekin and Güler Özçalık (2018); González-Fernández and González-Velasco (2018); Saliba de Oliviera et al., (2018); Yıldırım and Sakarya (2018); Dağlı and Ergün (2017); Demirhan and Aracıoğlu (2017); Gürkan and Gürkan (2017); Fındık and Ocak (2016); Tuan et al., (2016); Şişmanoğlu and Yaşar Akçalı (2016); Apergis and Sorros (2014); Uzun Kocamış and Güngör (2014); Atalay, Anafarta and Sarvan (2013); Çiçek and Onat (2012); Tatar (2010); Lantz and Sahut (2005); etc." It is observed that the mentioned studies were conducted in the tourism, manufacturing, automotive, technology, and renewable energy sectors.

This study examines the impact of innovation activities on the FP of companies operating in the "manufacturing sector of the Borsa Istanbul (BIST)". In contrast to previous studies in the manufacturing sector, such as those by "Sandal and Gacar (2021) and Tatar (2010)", this research contributes to the literature by providing findings based on a larger sample size and more recent data set. The goal of the reserach is to get the answer if a significant relationship exists between firms' innovation activities and their FP, and if so, what direction this relationship takes. In this context, the study investigates the effect of variables such as R&D expenses and the proportion of intangible fixed assets to total assets, as independent variables, on the return on assets (ROA) and return on equity (ROE), controlling for variables such as leverage and firm size, using panel regression analysis.

The study is significant for presenting current findings on the relationship between innovation activities and FP of companies listed in "the manufacturing sector of the Borsa Istanbul (BIST)" in the Turkish context.

The study first reviewed the relevant literature on the effect of innovation activities on FP. Subsequently, the dataset, variables, research model, and findings related to the study were explained. In the conclusion section, the outcomes obtained from the analyses were discussed, and

recommendations were provided.

2. LITERATURE REVIEW

There are numerous studies in national and international literature that examine the impact of firms' innovation activities on FP. The mentioned studies and their findings are as follows:

In the study by "Lantz and Sahut (2005)", the impact of R&D expenditures and intangible fixed assets on FP was investigated for 213 firms listed on EURONEXT and NASDAQ for the year 2004. As a consequence of the research, "R&D expenditures" and intangible fixed assets have a negative impact of FP.

In the study by "Çiçek and Onat (2012)", the impact of innovation activities on firm performance was examined. The relationship between research and development activities aimed at innovation and FP of 9 firms listed in the information technology sector on the Istanbul Stock Exchange was tested using data envelopment analysis method. It was noted that 5 out of 9 firms exhibited efficient performance in the research.

In the research conducted by "Atalay et al. (2013)", the relationship between innovation activities and firm performance was examined. A research was administered to top-level managers of 113 companies listed in the automotive industry in Turkey. It was found that there is a positive relationship between innovation activities and firm performance in the research.

In the research by "Apergis and Sorros (2014)", the effect of R&D expenses on profitability of 183 firms operating in the renewable energy sector in the United States was examined for the years 2000-2012. The data were tested using "panel data analysis". It was noted that R&D expenses have a positive effect on profitability in the study.

In the study by "Uzun Kocamış and Güngör (2014)", the impact of R&D expenses on profitability was investigated for 16 firms operating in the "Borsa Istanbul (BIST) Technology sector" for the years 2009-2013. "Regression analysis "was used to analyze the data. It was concluded that R&D expenses have a positive effect on firm performance indicators such as pre-tax profit, operating profit, and net profit.

In the study conducted by "Przychodzen and Przychodzeń (2015)", they examined the relationship between eco-innovation and financial performance. In the study, 2006-2013 data of public companies in Poland and Hungary were examined. As a result of the study, it was determined that the return on assets and return on equity of companies implementing eco-innovation were higher. However, companies that implement eco-innovation are larger; It has been determined that they are less likely to be exposed to financial risk and their cash flows are higher.

In the study conducted by "Cegarra-Navarro et al., (2016)", the role of a company's innovation culture in linking economic and social responsibilities with financial performance was examined. In the study, a survey was applied to 133 companies participating in the Spanish Social Environment Agreement. As a result of the study, it was determined that companies that use innovation to support economic and social successes effectively benefit from economic successes to achieve higher financial performance.

In the study by "Fındık and Ocak (2016)", the effect of intangible fixed assets of firms listed in the "Borsa Istanbul National All Shares Index" on FP was examined for the years 2005-2013. The findings of the study suggest that intangible fixed assets increase the ROA.

In the study conducted by "Tuan et al. (2016)", the impact of innovation activities on firm performance was investigated. A survey was administered to top-level managers of 118 firms operating in the mechanical, electronic, motorcycle, and automobile industries in Vietnam. It was found that firms focusing more on innovation activities exhibit higher firm performance.

In the study by "Şişmanoğlu and Yaşar Akçalı (2016)", the impact of innovation activities on FP was examined for 7 information and technology firms for the years 2005-2014. The data were

tested using panel data analysis. It was determined that R&D expenses of firms such as "Aselsan and Link Bilgisayar" have a positive effect on sales.

In the study by "Dağlı and Ergün (2017)", the impact of R&D expenses on profitability was examined for 68 firms listed on "Borsa Istanbul (BIST)" with uninterrupted R&D expenditures for the years 2010-2013. The study found a negative relationship between ROA and leverage, as well as a positive effect between R&D expenses and ROA.

In the study by "Demirhan and Aracıoğlu (2017)", the relationship between innovation activities and FP of firms listed on the "BIST Technology Index" was investigated. Data from 13 firms listed on the "BIST Technology Index" for the years 2013-2016 were analyzed using the TOPSIS method. The study revealed a weak relationship between TOPSIS values and innovation activities. Additionally, a moderate correlation was found between ROA and PD/DD with the ratio of R&D expenses.

"Gürkan and Gürkan (2017)" examined the impact of innovation level on the FP of firms listed on the "BIST Corporate Governance Index". Data from 20 firms listed on the "BIST Corporate Governance Index" for the years 2012-2016 were analyzed using panel data. The research noted that there is a significant positive relationship between innovation level and FP.

In the study by "Aytekin and Güler Özçalık (2018)", the relationship between R&D expenses and FP was investigated for 7 firms listed on the "BIST Technology Index" for the period 2011Q1-2018Q1 using "panel data analysis". The study found a positive relationship between R&D expenses and FP. In other words, as R&D expenses increase, firms' sales revenues and profitability also increase.

In the study by "González-Fernández and González-Velasco (2018)", the relationship between innovation activities and corporate performance was investigated. Data from Spanish firms for the years 2007-2013 were analyzed using panel data models. The study found a positive relationship between innovation activities and ROE.

In the study conducted by "Ruggiero and Cupertino (2018)", the mediating role of innovation activities in the relationship between corporate financial performance and corporate social performance was examined. In the study, 2010-2014 data of 165 companies listed in the Golobal 100 Index were examined with panel regression. As a result of the study, it was determined that innovation is a critical factor in the relationship between corporate financial performance and corporate social performance. The study found that companies with innovation activities responded faster and better to economic, social and environmental challenges than companies without innovation activities.

"Saliba de Oliviera et al. (2018)" examined the relationship between innovation activities and FP of 5025 firms in Brazil. In the study, two nationwide surveys conducted by IBGE with companies from various sectors and different sizes were applied. The findings suggest that while firms' efforts in innovation activities lead to new products, the risky and costly nature of these activities may not positively impact FP in the short term.

"Yıldırım and Sakarya (2018)" investigated the impact of R&D expenses on FP for 16 firms operating in the "BIST Technology sector" for the years 2009-2016. The data were analyzed using "panel data analysis". The study concluded that R&D expenses have a significant positive effect on both ROA and ROE.

"Aslan and Aygün (2019)" examined the effect of innovation activities on firm performance for firms in the "BIST Manufacturing industry". A survey was administered to 135 firms, and structural equation modeling was conducted. The study concluded that innovation activities undertaken by firms have a significant positive effect on firm performance.

In the study by "Canh et al. (2019)", the effect of innovation on firm performance and corporate social responsibility was examined. In the study, 2011-2013 data of manufacturing companies in

Vietnam were examined. As a result of the study, it was concluded that process and product innovations are beneficial for company performance in terms of market share.

In the study by "Gültekin and Onuk (2020)", the effect of innovation activities on firm performance was investigated for 59 firms operating in the automotive industry registered in the Bursa Organized Industrial Zone. A survey was administered to 160 white-collar employees of these 59 firms. The study found that the sub-dimensions of the innovation scale, specifically 'Marketing and Process Innovation', have a significant and positive effect on firm performance.

"Sandal and Gacar (2021)" examined the relationship between innovation activities and profitability of firms in the "automotive sector of the Borsa Istanbul Manufacturing Industry". Data from quarterly periods (20 periods) for the years 2016-2020 were tested using "panel data analysis". The research found that R&D expenses have a significant effect on both ROA and ROE, indicating that firms with higher R&D expenses also exhibit higher profitability. The leverage variable was determined to have a negative effect on both ROA and ROE.

In the study by "Büyükipekçi and Öztürk (2023)", the impact of innovation and market orientation on FP in accommodation enterprises was investigated. A survey was conducted on 16 accommodation enterprises with 4 and 5 stars in Konya. The research concluded that market orientation and innovation have a positive effect on FP.

"Lehenchuk et al. (2023)" examined the effect of intangible fixed assets on FP. Data from 180 firms operating in the "information and communication technologies sector" for the years 2015-2019 were analyzed using "panel data analysis". The research noted that both intangible fixed assets and R&D expenses have a negative effect on FP.

Overall, upon reviewing the literature, it has been determined that the studies were conducted in the tourism, manufacturing, automotive, technology, and renewable energy sectors. Studies examining the impact of innovation activities on firms' FP commonly utilize "panel data analysis" methods. Additionally, methods such as surveys, structural equation modeling, TOPSIS, regression analysis, and data envelopment analysis have been employed to research the effect of innovation activities on FP. It has been observed in both national and international studies that there is a significant positive effect and relationship between innovation activities and FP.

3. DATASET AND METHODOLOGY

The data of the study consists of data from 80 firms listed in the "Borsa Istanbul (BIST) manufacturing sector" for the years 2018-2022. Data concerning the firms were derived from the "Public Disclosure Platform (PDP)" in February 2024, as well as from integrated reports, activity reports, footnotes, and disclosures published on the firms' websites.

The list of companies examined is presented in Appendix-1.

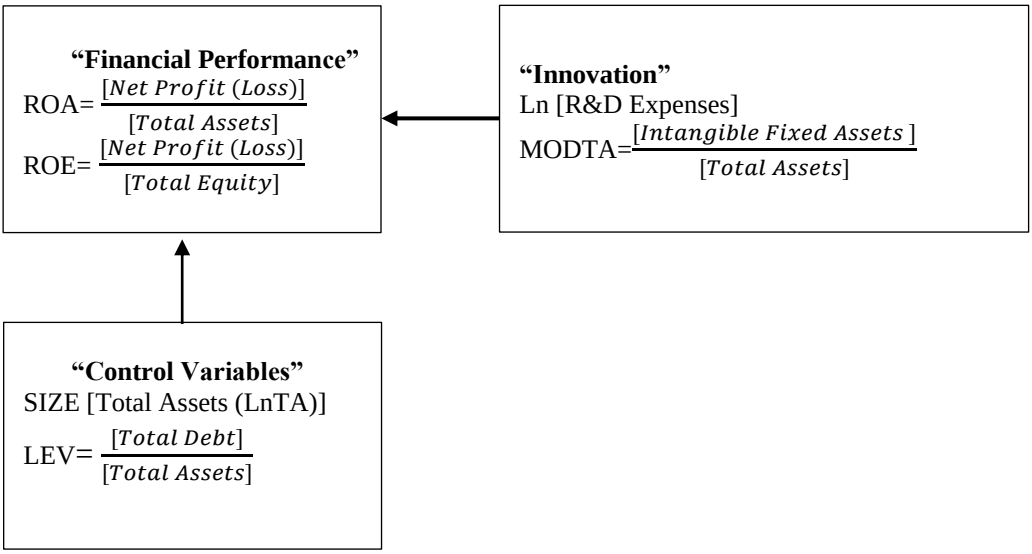
During the research period, there were 222 firms listed in "the Borsa Istanbul (BIST) Manufacturing Sector". However, it was determined that 124 of these firms did not have consistent R&D expenses over the study years, and they were therefore excluded from the sample. This limitation constrains the scope of the study. Additionally, it was found that 18 firms had missing observations for some variables, especially for the years 2018-2019, and these firms were also excluded from the study sample. This situation represents another constraint of the study. Ultimately, data from 80 firms were included in the analysis. Information regarding the variables of the study is reported in "Table 1".

Table 1. Information Regarding Variables

"Abbreviation of Variable"	*"Variable Name"*	*"Calculation of Variable"*	*"Source"*
"ROA"	"Return on Assets"	"Net Profit (Loss)[1] / Toplam Assets"	"Sandal and Gacar (2021); Yıldırım and Sakarya (2018); Dağlı and Ergün (2017); Demirhan and Aracıoğlu (2017); Gürkan and Gürkan (2017); Apergis and Sorros (2014); Tatar (2010)"
"ROE"	"Return on Equity"	"Net Profit (Loss)[2] / Total Equity"	"Sandal and Gacar (2021); Saliba de Oliviera et al. (2018); Yıldırım and Sakarya (2018); Demirhan and Aracıoğlu (2017); Apergis and Sorros (2014); Tatar (2010)"
"RD"	"Research and Development Expenses"	"Ln (Research and Development Expenses)"	"Şişmanoğlu and Yaşar Akçalı (2016)"
"MODTA"	"Share of Intangible Fixed Assets in Total Assets"	"Intangible Fixed Assets / Total Assets"	"Çiçek and Onat (2012); Tatar (2010)"
"SIZE"	"Size[3]"	"Ln (Total Assets)"	"Dağlı and Ergün (2017); Şişmanoğlu and Yaşar Akçalı (2016); Tatar (2010)"
"LEV"	"Leverage"	"Total Debt / Total Assets"	"Dağlı and Ergün (2017); Sandal and Gacar (2021); Tatar (2010)"

Research and development expenses as a percentage of total assets, and intangible fixed assets as a percentage of total assets were included as independent variables, while leverage and size were included as control variables. ROA and ROE were included as dependent variables in the analysis. The model of the study is presented in 'Figure 1'.

[1] "Net loss for the respective year was considered in calculating ROA for firms that incurred losses during the study period."
[2] "Net loss for the respective year was considered in calculating ROE for firms that incurred losses during the study period."
[3] "In this study, Total Assets was used for the size variable, and the logarithm of total assets was calculated to ensure linearity."



"Figure 1. Research Model"

The method applied in the research was "panel regression analysis". The models constructed in the research are as follows:

"Model 1"

$$"ROA_{(i,t)} = \beta_0 + \beta_1(\text{Ln}ArGe)_{(i,t)} + \beta_2(MODTA)_{(i,t)} + \beta_3(\text{Ln}SIZE)_{(i,t)} + \beta_4(LEV)_{(i,t)} + \in_t " \quad (1)$$

"Model 2"

$$"\text{ROE}_{(i,t)} = \beta_0 + \beta_1(\text{LnArGe})_{(i,t)} + \beta_2(MODTA)_{(i,t)} + \beta_3(\text{LnSIZE})_{(i,t)} + \beta_4(\text{LEV})_{(i,t)} + \in_t " \quad (2)$$

In the two aforementioned models, "i = 1,2,……..N represents the number of firms (80 firms), and t = 1, 2, 3, ……..…T denotes the time periods (5 years - from 2018 to 2022)". NxT indicates the total number of observations in the dataset (80x5 = 400). Therefore, this study's models utilized a 5-year dataset for 80 firms (Özşahin Koç and Deran, 2024: 86).

4. ESTIMATION METHOD

4.1. Variance Inflation Factor (VIF)

It expresses how much the variances of parameter estimates deviate from their true values due to multicollinearity.

$$X_1 = \alpha_0 + \alpha_1X_2 + \alpha_2X_3 + \ldots + \alpha_kX_k + u \quad (3)$$

$$\text{VIF} = \frac{1}{1 - R^2_{X1X2X3\ldots Xk}} \quad (4)$$

4.2. Cross-Sectional Dependence

It is used to test whether there is correlation between the residuals of the model.

$$Friedman's\ Test\ = \sqrt{\frac{2T}{N(N-1)}}\left(\sum_{i=1}^{N-1}\sum_{j=i+1}^{N}\hat{p}ij\right) \quad (5)$$

4.3. Huber (1967), Eicker (1967) and White (1980) Test

The first studies on robust standard errors were conducted by Huber (1967), Eicker (1967) and White (1980).

$$\text{Var}(\hat{\beta}) = (\grave{X}X)^{-1}\grave{X}VX\ (\grave{X}X)^{-1} \quad (6)$$

$$\text{Var}(\hat{\beta}) = (\grave{X}X)^{-1}\grave{X}diag(\hat{u}_i^2)X\ (\grave{X}X)^{-1} \quad (7)$$

5. FINDINGS

Descriptive statistics for the variables created to determine the impact of innovation on firms' FP are presented in "Table 2".

Table 2. Descriptive Statistics

"Variables"	*"Mean"*	*"Standard Deviation"*	*"Minimum"*	*"Maximum"*
"ROA"	0.0836	0.1081	-0.7300	0.5250
"ROE"	0.2121	1.3342	-6.9230	24.1920
"RD"	14.3257	2.3458	5.3940	20.3900
"MODTA"	0.0209	0.0303	0.0000	0.1630
"SIZE"	20.3315	1.8305	14.6500	24.8640
"LEV"	0.5944	0.2822	0.1470	3.9180

According to "Table 2", the "minimum value" of ROA is -0.7300 and the "maximum value" is 0.5250. The mean value of ROE is 0.2121, while the high difference between the "minimum and maximum values" is presumed to stem from differences in equity. Similarly, the "minimum and maximum values" of R&D expenditure (RD) are 5.3940 and 20.3900, respectively. This is likely due to differences in firms' levels of R&D spending. The highest leverage ratio among firms is 3.9180, and the lowest is 0.1470. The "correlation matrix" for the variables is showed in "Table 3".

Table 3. Correlation Matrix

"Variables"	*"ROA"*	*"ROE"*	*"RD"*	*"MODTA"*	*"SIZE"*	*"LEV"*
"ROA"	1.0000					
"ROE"	0.0936*	1.0000				
"RD"	0.0057	0.0101	1.0000			
"MODTA"	-0.0218	0.0578	0.0983	1.0000		
"SIZE"	0.0425	0.0040	0.7083***	-0.1349***	1.0000	
"LEV"	-0.5930***	0.0068	0.0542	0.1682***	-0.0226	1.0000
"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels"						

"Table 3" shows that the low correlations among the independent variables prevent multicollinearity issues. Multicollinearity problems can be identified using the "variance inflation factor (VIF)" (Yerdelen Tatoğlu, 2020). The calculated "VIF values" are presented in "Table 4".

Table 4. Variance Inflation Factor (VIF) Results

"Variable"	*"VIF"*
"RD"	2.1800
"MODTA"	1.1300
"SIZE"	2.2000
"LEV"	1.0300
"Mean VIF"	1.6300

According to "Table 4", the average "VIF values" of the models are lower than the critical value of

10, indicating that there is no multicollinearity issue. The presence of "unit and time effects" in the models has been tested. The presence of "unit and time effects" was tested using the "Likelihood Ratio (LR) Test" and "the Breusch-Pagan Lagrange Multiplier (LM) Test". The test results for "unit and time effects" are provided in "Table 5".

Table 5. Unit/Time Effects Test Results

Models	*Unit/Time Effect*	*LR*	*LM*
Model 1	Unit Effect	92.5800***	114.2700***
	Time Effect	0.0300	0.0000
Model 2	Unit Effect	0.0000	0.0000
	Time Effect	0.0300	0.0000

"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels"

According to the findings of the "LM and LR tests" for "Model 1", the null hypothesis 'there is no unit effect' is rejected. Thus, there is a unit effect in "Model 1". On the other hand, the null hypothesis 'there is no time effect' cannot be rejected in "Model 1", indicating no time effect. Therefore, "Model 1" is a one-way unit effect model. To decide whether the model should use "fixed or random effects", the findings of the "Hausman Test" are presented in "Table 6". For "Model 2", the LM and LR test results do not reject the null hypotheses of 'there is no unit effect' and 'there is no time effect'. Thus, there are no "unit and time effects" in "Model 2". "Pooled Ordinary Least Squares (OLS)" estimator can be applied for "Model 2".

Table 6. Hausman Test Results

	"Hausman Test"
Model 1	61.3200***

"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels"

According to the "Hausman test results" provided in "Table 6", the null hypothesis (H_0) 'fixed effects are consistent, random effects are efficient' is rejected for "Model 1", indicating that the fixed effects model is efficient. Following the decision on which estimation method to apply in the models, the test results for 'heteroscedasticity, autocorrelation, and cross-sectional dependence' are presented. Since there is no unit effect in "Model 2", cross-sectional dependence was not examined. The test results appropriate for the T<N condition, as suggested by Friedman (1937), are presented in "Table 7".

Table 7. Cross-Sectional Dependence Test Results

	"Friedman (1937) Test"
Model 1	7.9300

"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels"

According to the "cross-sectional dependence test results" provided in "Table 7", the null hypothesis (H_0) 'there is no cross-sectional dependence' cannot be rejected. There is no cross-sectional dependence in "Model 1". Baltagi (2005) suggests that unit root tests are not necessary for datasets examined for lower than 15 years and for micro panel datasets. Therefore, since the study analyzed a dataset spanning five years, unit root tests were not conducted. For the autocorrelation test, the "Baltagi-Wu (1999) LBI Test" was applied for "Model 1", and for "Model 2", the "Box-Pierce (1970) LM Test" was used. For the heteroscedasticity test, the "Modified Wald Test (Greene, 2002)" was conducted for "Model 1", and the "Breusch-Pagan (1979) / Cook-Weisberg (1983) test" was applied for

"Model 2".

Table 8. Heteroskedasticity and Autocorrelation Test Results for the Models

	Breusch-Pagan (1979)/Cook-Weiesberg (1983)	*Modified Wald Test*	*Baltagi-Wu (1999) LBI Test*	*Box-Pierce (1970) LM Test*
"Model 1"		0.0000***	1.4720	
"Model 2"	0.0700			13.9813***

"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels". "The critical value for the LBI test is 2."

"The null hypothesis for the "Modified Wald Test" and the "Breusch-Pagan (1979) / Cook-Weiesberg (1983) test" is "there is no heteroskedasticity". The null hypothesis (H_0) is rejected for "Model 1", while it cannot be rejected for "Model 2". Therefore, there is heteroskedasticity in "Model 1", but not in "Model 2". According to the autocorrelation test results, the statistic value for "Model 1" is lower than 2, indicating the presence of autocorrelation. The null hypothesis "there is no autocorrelation" for the "Box-Pierce (1970) LM Test" is rejected for "Model 2", indicating the presence of autocorrelation. Therefore, robust estimators were applied for both "Model 1" and "Model 2". For "Model 1", the "Huber (1967), Eicker (1967), and White (1980) Estimators" were used, while for "Model 2", the "Parks (1967)-Kmenta (1986) Estimator" was used. The findings are presented in "Table 9".

Table 9. Regression Prediction Results for Models

	Huber (1967), Eicker (1967) and White (1980) Test	*Parks (1967)-Kmenta* (1986) *Test*
"Variable"	*Model (1)*	*Model (2)*
"RD"	0.0063	-0.0008
"MODTA"	-0.6296***	1.9329***
"SIZE"	0.0358***	0.0128**
"LEV"	-0.1709***	-0.0159*
"Constant"	-0.6224***	-0.0821
"F sta."	40.1400***	
"Wald sta."		37.3100***
"R^2 (within)"	0.3895	

"Note: *** p<0.01; ** p<0.05; *p<0.10 significance levels"

According to "Table 9", the R&D variable is not statistically significant in "Model 1" and "Model 2". In "Model 1", where ROA is the dependent variable, the MODTA variable negatively affects ROA. On the other hand, in "Model 2", where ROE is the dependent variable, MODTA positively influences ROE. An increase in intangible fixed assets also enhances ROE. Among the control variables, SIZE positively affects both ROA and ROE. As firms' total assets increase, both ROA and ROE increase. The LEV variable has a negative effect on both ROA and ROE. As firms' leverage ratios increase, both ROAand ROE decrease. However, according to the F and Wald statistics indicating the significance of the models, the models are statistically significant. Looking at the R^2 value of "Model 1", the explanatory power of the independent variables for the dependent variable is approximately 0.39. However, the findings for "Model 2" do not include an R^2 value.

6. CONCLUSION

The study investigates the impact of R&D expenditures and intangible fixed asset ratios of manufacturing sector firms listed on BIST on FP during the period 2018-2022. As regards the consequences of the reserach, no statistically significant effect of firms' R&D expenditures on FP was found. In other words, investments in innovative products, processes, and technologies within the scope of R&D did not affect firms' profitability. This indicates that firms' innovative investments did not serve their purpose, and concrete outcomes were not achieved. Therefore, the benefits of firms' R&D investments do not extend beyond tax advantages. Contrary to the findings obtained in this study, the study conducted by Yıldırım and Sakarya (2018) found that R&D investments have a significant and positive effect on return on assets and return on equity. It is evaluated that the reason for this situation is due to the examination of the data of companies operating in the "BIST technology and information technology sector" where innovation activities are intense in the study conducted by Yıldırım and Sakarya (2018). Similarly, the study conducted by Aytekin and Güler Özçalık (2018) examined the data of companies traded in the "Borsa İstanbul Technology and Information Technology Indexes (XUTEK-XBLSM)" and determined that R&D investments have a positive effect on financial performance. The study conducted by Apergis and Sorros (2014) also observed that R&D expenditures have a strong effect on profitability. As a matter of fact, the findings of the studies of Aytekin and Güler Özçalık (2018), Yıldırım and Sakarya (2018) and Apergis and Sorros (2014) differ from the findings obtained in this study. On the other hand, in this study, it was concluded that intangible assets negatively affect return on assets while positively affecting return on equity. Similar findings were obtained in the study conducted by Lehenchuk et al. (2023). In the study conducted by González-Fernández and González-Velasco (2018), it was determined that innovation activities have a positive effect on financial performance. Return on assets is an important financial indicator that shows how efficiently a firm uses its assets. Return on equity is used to measure the profitability of the capital invested by the firm's owners and partners. Innovation activities generally expand the firms' markets, increase their sales and revenues. This increase can increase the firm's return on equity when converted into equity. Therefore, the net effect of innovation on return on equity may depend on the increase in revenue. Although firms' innovation efforts lead to product development and innovations, it is believed that innovation does not reflect on FP in the short term due to the inherent risks and costs associated with innovation. The economic problems experienced in developing countries, such as Turkey, are considered as a primary contributing factor to this phenomenon. Furthermore, as firms' intangible fixed assets increase, their ROE also increases. This indicates that firms' corporate reputation, technology usage, and human capital have a positive effect on ROE. It is now clear that intangible fixed assets have a significant impact on ROE. In addition, it is expected that directing firms' R&D expenditures towards more accurate investments where the benefits outweigh the costs will positively contribute to their FP. The leverage variable was observed to have a negative impact on both ROA and ROE. Therefore, an increase in firms' borrowing levels reduces both ROA and ROE. Leverage ratio is an important indicator of the company's financial risk. It is important to keep leverage ratios at an optimal level and review borrowing strategies. Methods should be developed to minimize borrowing costs and financial risks. The study suggests recommendations for firm owners, investors, regulatory authorities, and policymakers. While encouraging financial support and incentives for firms' innovation activities and investments, it is recommended to monitor whether the financial incentives provided for supporting R&D

activities are used for their intended purpose, determine how much the benefits outweigh the costs, and ensure that investments are utilized in more effective R&D activities.

In this study, 80 firms listed in "the BIST Manufacturing Sector" were included in the analysis. According to the findings, it was determined that R&D investments, which are innovative activities, do not have a significant effect on financial performance. As stated above, it differs from the findings of the studies conducted by Aytekin and Güler Özçalık (2018), Yıldırım and Sakarya (2018) and Apergis and Sorros (2014) in the literature. The studies in question examined sectors where innovation activities are intense, such as technology and renewable energy. Therefore, it is evaluated that they do not support the findings obtained in this study. In this context, it can be suggested that the studies to be conducted in the future should be added to the literature by including data from sectors where innovation activities are intense.

"**Hakem Değerlendirmesi:** Dış Bağımsız"

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"**Finansal Destek:** Yazar(lar) bu çalışma için finansal destek almadığını belirtmiştir. "

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REFERENCES

Akgüç, Ö. (2010). Finansal Yönetim (8. Baskı). İstanbul: Avcıol Basım Yayım.

Apergis, N. & Sorros, J. (2014). The role of R&D expenses for profitability: evidence from U.S. fossil and renewable energy firms. *International Journal of Economics and Finance*, 6(3), 8-15.

Aslan, Y., & Aygün, M. (2019). İnovasyonun firma performansı üzerine etkisi: BİST'te imalat sektöründe faaliyet gösteren firmalar üzerine bir inceleme. *Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi*, 7(6), 91-109. https://doi.org/10.18506/anemon.506387

Atalay, M., Anafarta, N., & Sarvan, F. (2013). The relationship between innovation and firm performance: an empirical evidence from Turkish automotive supplier industry. *Procedia-social and Behavioral Sciences*, 75, 226-235. doi: 10.1016/j.sbspro.2013.04.026

Aytekin, S. & Güler Özçalık, S. (2018). Borsa İstanbul teknoloji ve bilişim endeksi firmalarında Ar-Ge harcamaları ve finansal performans ilişkisi. *Anemon Muş Alparslan Üniversitesi Sosyal Bilimler Dergisi*, 6(18): 67-73. http://dx.doi.org/10.18506/anemon.452625

Baltagi, B., & Wu, P. (1999). Unequally spaced panel data regressions with AR(1) disturbances. *Econometric Theory*, 15(6), 814–823.

Box, G. E. P., & Pierce, D. A. (1970). Distribution of residual autocorrelations in autoregressive-ıntegrated moving average time series models. *Journal of American Statistical Association*, 65(332), 1509–1526.

Breusch, A. T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica*, 47(5), 1287–1294.

Büyükipekçi, S., & Öztürk, G. (2023). Konaklama işletmelerinde pazar yönlülük ve inovasyonun finansal performans üzerindeki etkisi. *Selçuk Üniversitesi Sosyal Bilimler Meslek Yüksekokulu Dergisi*, 26(2), 370-389. https://doi.org/10.29249/selcuksbmyd.1328535

Canh, N., Liem, N., Thu, P., & Khuong, N. (2019). The Impact of Innovation on the Firm Performance and Corporate Social Responsibility of Vietnamese Manufacturing Firms. *Sustainability*. 11(13), 3666-3680. https://doi.org/10.3390/SU11133666.

Cegarra-Navarro, J., Reverte, C., Gómez-Melero, E., & Wensley, A. (2016). Linking social and economic responsibilities with financial performance: The role of innovation. *European Management Journal*, 34(5), 530-539. https://doi.org/10.1016/J.EMJ.2016.02.006.

Cook, D., & Weisberg, S. (1983). Diagnostics for heteroscedasticity in regression. *Biometrika*, 70(1), 1–10. https://www.jstor.org/stable/2335938

Çiçek, H., & Onat, O. (2012). İnovasyon odaklı faaliyetlerin firma performansına etkisinin veri zarflama analizi ile belirlenmesi; İMKB üzerine bir araştırma. *Mehmet Akif Ersoy Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 4(7), 46-53.

Dağlı, H. & Ergün, T. (2017). Türkiye'de AR-GE harcamalarının firma kârlılığına etkisi. *Karadeniz Teknik Üniversitesi Sosyal Bilimler Enstitüsü Sosyal Bilimler Dergisi,* 7(13), 69-83.

Demirhan, D., & Aracıoğlu, B. (2017). İnovasyon ve finansal performans arasındaki ilişki: BIST teknoloji endeksindeki firmalar üzerine bir araştırma. *Uluslararası İktisadi ve İdari İncelemeler Dergisi*, 195-218. DOI: 10.18092/ulikidince.323730

Eicker, F. (1967). Limit theorems for regressions with unequal and dependent errors. Fifth Berkeley Sumposium on Mathematical Statistics and Probabilidy, 59–82.

Fındık, D., & Ocak, M. (2016). Türkiye'de maddi olmayan varlık yatırımlarının işletmelerin finansal performansı üzerine etkisi. *Ege Academic Review*, 16(3), 397–414.

Friedman, M. (1937). The use of ranks to avoid the assumption of normality implicit in the analysis of variance. *Journal of the American Statistical Association*, 32(200), 675–701.

González-Fernández, M., & González-Velasco, C. (2018). Innovation and corporate performance in the Spanish regions. *Journal of Policy Modeling*, 40(5), 998-1021. https://doi.org/10.1016/j.jpolmod.2018.05.005

Greene, W. H. (2002). Econometric Analysis. Pearson Education.

Gültekin, A., & Onuk, M. (2020). İnovasyonun şirket performansı üzerine etkisi: Bursa otomotiv sanayisi üzerine bir inceleme. *Uluslararası Sosyal Araştırmalar Dergisi*, 13(71), 939-956. DOI: 10.17719/jisr.10568

Gürkan, N., & Gürkan, S. (2017). Yenilikçilik kavramının işletmelerin finansal performansı üzerindeki etkisi. *Uluslararası Yönetim İktisat ve İşletme Dergisi*, 13(13), 213-226.

Huber, P. (1967). Behavior of maximum likelihood estimates under nonstandard conditions. Proc. 5th Berkeley Sympt. Math. Statist. Prob., 221–233.

Kmenta, J. (1986). Elements of Econometrics. In Elements of Econometrics. Macmillan Publishing Company. https://doi.org/10.3998/mpub.15701

Lantz, J.-S., & Sahut, J.-M. (2005). R&D investment and the financial performance of technological firms. *International Journal of Business*, 10(3), 251–270.

Lehenchuk, S. F., Vakaliuk, T. A., Nazarenko, T. P., Kubaščíková, Z., & Juhászová, Z. (2023). The impact of ıntangible assets on the financial performance of Slovak ict companies: a panel data regression analysis. CEUR Workshop Proceedings, 61–81. https://ceur-ws.org/Vol-3465/paper08.pdf

Özşahin Koç, F., & Deran, A. (2024). Borsa İstanbul imalat sektöründe yer alan firmaların borçlanma maliyetlerinin finansal performansa etkisi üzerine araştırma. *Journal of Accounting and Taxation Studies*, 17(1), 73-98. https://doi.org/10.29067/muvu.1395436

Parks, R. W. (1967). Efficient estimation of a system of regression equations when disturbances are both serially and contemporaneously correlated. *Journal of the American Statistical Association*, 62(318), 500–509.

Przychodzen, J., & Przychodzeń, W. (2015). Relationships between eco-innovation and financial performance – evidence from publicly traded companies in Poland and Hungary. *Journal of Cleaner Production*, 90, 253-263. https://doi.org/10.1016/J.JCLEPRO.2014.11.034.

Ruggiero, P., & Cupertino, S. (2018). CSR Strategic Approach, Financial Resources and Corporate Social Performance: The Mediating Effect of Innovation. *Sustainability*. 10(10), 3611-3633. https://doi.org/10.3390/SU10103611.

Saliba de Oliviera J. A., Cruz Basso, L. F., Kimura, H. & Sobreiro, V. A. (2018). Innovation and financial performance of companies doing business in Brazil. *International Journal of Innovation Studies*, 2(4), 153-164. https://doi.org/10.1016/j.ijis.2019.03.001

Sandal, M., & Gacar, A. (2021). İnovasyon ve kârlılık arasındaki ilişki: otomotiv sektörü üzerine bir araştırma. *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 7(2), 556-571. DOI: 10.31592/aeusbed.908791

Şişmanoğlu, E. & Yaşar Akçalı, B. (2016). The effect of innovation on financial performance of some ınformation and technology companies in Turkey. *Ekoist: Journal of Econometrics and Statistics*, 24, 82-93.

Tatar, H. (2010). İnovasyonun finansal performans üzerindeki etkisi: imalat sektöründe bir uygulama. Yayımlanmamış Yüksek Lisans Tezi. Gaziantep: Gaziantep Üniversitesi Sosyal Bilimler Enstitüsü.

Tekin Turhan, G. (2021). Ar-Ge harcamalarinin finansal performansa etkisi: BİST'de işlem gören şirketler analizi. *Bilim-Teknoloji-Yenilik Ekosistemi Dergisi*, 2(1), 45-55.

Tuan, N., Nhan, N., Giang, P., & Ngoc, N. (2016). The effects of innovation on firm performance of supporting ındustries in Hanoi, Vietnam. *Journal of Industrial Engineering and Management*, 9(2), 413-431. https://doi.org/10.3926/jiem.1564

Uzun Kocamış, T., & Güngör, A. (2014). Türkiye'de Ar-Ge harcamaları ve teknoloji sektöründe Ar-Ge giderlerinin kârlılık üzerine etkisi: Borsa İstanbul uygulaması. *Maliye Dergisi*, 166, 127-138.

White, H. (1980). A Heteroskedasticity-Consistent Covariance Matrix Estimator and A Direct Test for Heteroskedasticity. *Econometrica*, 48(4), 817–838.

Yerdelen Tatoğlu, F. (2020). Panel Veri Ekonometrisi, Beta Yayınları, 5. Baskı, İstanbul.

Yıldırım, H. & Sakarya, Ş. (2018). Firmaların Ar-Ge harcamalarının aktif ve özsermaye kârlılığına etkisi: BİST teknoloji sektöründe bir uygulama. *İşletme Bilimi Dergisi,* 6(3), 39-60. https://doi.org/10.22139/jobs.425497

APPENDIX

APPENDIX-1: List of Companies Examined in BIST Manufacturing Sector

"Rank"	"Code"	"Company Title"
"1"	"ATEKS"	"AKIN TEKSTİL A.Ş."
"2"	"AKSA"	"AKSA AKRİLİK KİMYA SANAYİİ A.Ş."
"3"	"ALCAR"	"ALARKO CARRIER SANAYİ VE TİCARET A.Ş."
"4"	"ALKIM"	"ALKİM ALKALİ KİMYA A.Ş."
"5"	"ALKA"	"ALKİM KAĞIT SANAYİ VE TİCARET A.Ş."
"6"	"ASUZU"	"ANADOLU ISUZU OTOMOTİV SANAYİ VE TİCARET A.Ş."
"7"	"ARCLK"	"ARÇELİK A.Ş."
"8"	"AYGAZ"	"AYGAZ A.Ş."
"9"	"BAKAB"	"BAK AMBALAJ SANAYİ VE TİCARET A.Ş."
"10"	"BANVT"	"BANVİT BANDIRMA VİTAMİNLİ YEM SANAYİİ A.Ş."
"11"	"BRISA"	"BRİSA BRIDGESTONE SABANCI LASTİK SANAYİ VE TİCARET A.Ş."
"12"	"BURCE"	"BURÇELİK BURSA ÇELİK DÖKÜM SANAYİİ A.Ş."
"13"	"BUCIM"	"BURSA ÇİMENTO FABRİKASI A.Ş."
"14"	"CELHA"	"ÇELİK HALAT VE TEL SANAYİİ A.Ş."
"15"	"CEMTS"	"ÇEMTAŞ ÇELİK MAKİNA SANAYİ VE TİCARET A.Ş."
"16"	"CIMSA"	"ÇİMSA ÇİMENTO SANAYİ VE TİCARET A.Ş."
"17"	"DARDL"	"DARDANEL ÖNENTAŞ GIDA SANAYİ A.Ş."
"18"	"DMSAS"	"DEMİSAŞ DÖKÜM EMAYE MAMÜLLERİ SANAYİ A.Ş."
"19"	"DESA"	"DESA DERİ SANAYİ VE TİCARET A.Ş."
"20"	"DEVA"	"DEVA HOLDİNG A.Ş."
"21"	"DITAS"	"DİTAŞ DOĞAN YEDEK PARÇA İMALAT VE TEKNİK A.Ş."
"22"	"DGNMO"	"DOĞANLAR MOBİLYA GRUBU İMALAT SANAYİ VE TİCARET A.Ş."
"23"	"DOKTA"	"DÖKTAŞ DÖKÜMCÜLÜK TİCARET VE SANAYİ A.Ş."
"24"	"DYOBY"	"DYO BOYA FABRİKALARI SANAYİ VE TİCARET A.Ş."
"25"	"EGEEN"	"EGE ENDÜSTRİ VE TİCARET A.Ş."
"26"	"EGPRO"	"EGE PROFİL TİCARET VE SANAYİ A.Ş."
"27"	"EGSER"	"EGE SERAMİK SANAYİ VE TİCARET A.Ş."
"28"	"EMKEL"	"EMEK ELEKTRİK ENDÜSTRİSİ A.Ş."
"29"	"EREGL"	"EREĞLİ DEMİR VE ÇELİK FABRİKALARI T.A.Ş."
"30"	"FROTO"	"FORD OTOMOTİV SANAYİ A.Ş."
"31"	"FORMT"	"FORMET METAL VE CAM SANAYİ A.Ş."
"32"	"GENTS"	"GENTAŞ DEKORATİF YÜZEYLER SANAYİ VE TİCARET A.Ş."
"33"	"HEKTS"	"HEKTAŞ TİCARET T.A.Ş."
"34"	"IHEVA"	"İHLAS EV ALETLERİ İMALAT SANAYİ VE TİCARET A.Ş."
"35"	"ISDMR"	"İSKENDERUN DEMİR VE ÇELİK A.Ş."
"36"	"ISSEN"	"İŞBİR SENTETİK DOKUMA SANAYİ A.Ş."

“37”	“JANTS”	“JANTSA JANT SANAYİ VE TİCARET A.Ş.”
“38”	“KLKIM”	“KALEKİM KİMYEVİ MADDELER SANAYİ VE TİCARET A.Ş.”
“39”	“KARSN”	“KARSAN OTOMOTİV SANAYİİ VE TİCARET A.Ş.”
“40”	“KRTEK”	“KARSU TEKSTİL SANAYİİ VE TİCARET A.Ş.”
“41”	“KATMR”	“KATMERCİLER ARAÇ ÜSTÜ EKİPMAN SANAYİ VE TİCARET A.Ş.”
“42”	“KERVT”	“KEREVİTAŞ GIDA SANAYİ VE TİCARET A.Ş.”
“43”	“KRVGD”	“KERVAN GIDA SANAYİ VE TİCARET A.Ş.”
“44”	“KLMSN”	“KLİMASAN KLİMA SANAYİ VE TİCARET A.Ş.”
“45”	“KLSYN”	“KOLEKSİYON MOBİLYA SANAYİ A.Ş.”
“46”	“KORDS”	“KORDSA TEKNİK TEKSTİL A.Ş.”
“47”	“KRSTL”	“KRİSTAL KOLA VE MEŞRUBAT SANAYİ TİCARET A.Ş.”
“48”	“KUTPO”	“KÜTAHYA PORSELEN SANAYİ A.Ş.”
“49”	“MEDTR”	“MEDİTERA TIBBİ MALZEME SANAYİ VE TİCARET A.Ş.”
“50”	“MNDRS”	“MENDERES TEKSTİL SANAYİ VE TİCARET A.Ş.”
“51”	“MERCN”	“MERCAN KİMYA SANAYİ VE TİCARET A.Ş.”
“52”	“NUHCM”	“NUH ÇİMENTO SANAYİ A.Ş.”
“53”	“OTKAR”	“OTOKAR OTOMOTİV VE SAVUNMA SANAYİ A.Ş.”
“54”	“OZRDN”	“ÖZERDEN PLASTİK SANAYİ VE TİCARET A.Ş.”
“55”	“PARSN”	“PARSAN MAKİNA PARÇALARI SANAYİİ A.Ş.”
“56”	“PETUN”	“PINAR ENTEGRE ET VE UN SANAYİİ A.Ş.”
“57”	“PNSUT”	“PINAR SÜT MAMULLERİ SANAYİİ A.Ş.”
“58”	“POLTK”	“POLİTEKNİK METAL SANAYİ VE TİCARET A.Ş.”
“59”	“QUAGR”	“QUA GRANITE HAYAL YAPI VE ÜRÜNLERİ SANAYİ TİCARET A.Ş.”
“60”	“SAFKR”	“SAFKAR EGE SOĞUTMACILIK KLİMA SOĞUK HAVA TESİSLERİ İHRACAT İTHALAT SANAYİ VE TİCARET A.Ş.”
“61”	“SARKY”	“SARKUYSAN ELEKTROLİTİK BAKIR SANAYİ VE TİCARET A.Ş.”
“62”	“SASA”	“SASA POLYESTER SANAYİ A.Ş.”
“63”	“SEKUR”	“SEKURO PLASTİK AMBALAJ SANAYİ A.Ş.”
“64”	“SELVA”	“SELVA GIDA SANAYİ A.Ş.”
“65”	“SILVR”	“SİLVERLİNE ENDÜSTRİ VE TİCARET A.Ş.”
“66”	“SKTAS”	“SÖKTAŞ TEKSTİL SANAYİ VE TİCARET A.Ş.”
“67”	“TATGD”	“TAT GIDA SANAYİ A.Ş.”
“68”	“TOASO”	“TOFAŞ TÜRK OTOMOBİL FABRİKASI A.Ş.”
“69”	“TUKAS”	“TUKAŞ GIDA SANAYİ VE TİCARET A.Ş.”
“70”	“TMSN”	“TÜMOSAN MOTOR VE TRAKTÖR SANAYİ A.Ş.”
“71”	“TUPRS”	“TÜPRAŞ-TÜRKİYE PETROL RAFİNERİLERİ A.Ş.”
“72”	“PRKAB”	“TÜRK PRYSMİAN KABLO VE SİSTEMLERİ A.Ş.”
“73”	“TTRAK”	“TÜRK TRAKTÖR VE ZİRAAT MAKİNELERİ A.Ş.”
“74”	“ULUUN”	“ULUSOY UN SANAYİ VE TİCARET A.Ş.”
“75”	“ULKER”	“ÜLKER BİSKÜVİ SANAYİ A.Ş.”

“76”	“VESBE”	“VESTEL BEYAZ EŞYA SANAYİ VE TİCARET A.Ş.”
“77”	“VESTL”	“VESTEL ELEKTRONİK SANAYİ VE TİCARET A.Ş.”
“78”	“VKING”	“VİKİNG KAĞIT VE SELÜLOZ A.Ş.”
“79”	“YATAS”	“YATAŞ YATAK VE YORGAN SANAYİ TİCARET A.Ş.”
“80”	“YUNSA”	“YÜNSA YÜNLÜ SANAYİ VE TİCARET A.Ş.”

“**Source:** Public Disclosure Platform (2024)”