

The Impact of Structural and Firm-Specific Characteristics on Stock Returns in Turkey: A Panel Data Analysis

İsmail DOĞAN

Kırşehir Ahi Evran University
idogan@ahievran.edu.tr
ORCID ID: 0000-0002-8745-3904

Güven SEVİL

Anadolu University
gsevil@anadolu.edu.tr
ORCID ID: 0000-0001-7592-3799

Araştırma Makalesi

DOI: 10.31592/aeusbed.1512016

Geliş Tarihi: 07.07.2024

Revize Tarihi: 25.07.2024

Kabul Tarihi: 17.01.2025

Atıf Bilgisi

Doğan, İ. ve Sevil, G. (2025). The impact of structural and firm-specific characteristics on stock returns in Turkey: A panel data analysis. *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, 11(1), 207-219.

ABSTRACT

Determinants influencing share earnings are a significant research topic in the finance literature. This study aims to identify the structural and firm-specific characteristics affecting stock returns in Turkey over the period from 2005 to 2017, and to elucidate the relationship between these characteristics and stock returns using regression analysis with standardized panel data variables. Another objective of the study is to determine which characteristics have a more substantial impact on stock returns. In the study, structural factors such as exchange rate, money supply, inflation, foreign portfolio investment, balance of payments, gold, and GDP are considered. Firm-specific factors include liquidity, profitability, leverage, asset structure, price-earnings ratio, earnings per share, market value, market-to-book value ratio, sales potential, asset growth rate, risk, and size. The findings of the research indicate that ten structural and firm-specific characteristics are significantly correlated with firm earnings. Based on these results, it can be inferred that there is a relationship between firm earnings and both structural and firm-specific characteristics. Consequently, it is suggested that individual and corporate investors, company owners, managers, policymakers, and economists should collectively evaluate both structural and firm-specific characteristics.

Keywords: Stock returns, structural characteristics, firm specific characteristics, regression with standardized variables

Türkiye'de Hisse Getirileri Üzerinde Yapısal ve Firma Bazlı Karakteristiklerin Etkisi: Bir Panel Veri Analizi

ÖZ

Hisse kazançlarını etkileyen belirleyiciler, finans literatüründe önemli bir araştırma konusudur. Bu çalışmanın amacı, 2005-2017 dönemi kapsamında Türkiye'de hisse getirilerini etkileyen yapısal ve firma bazlı özellikleri belirlemek ve bu özellikler ile hisse getirileri arasındaki ilişkiyi panel veri ve standartlaştırılmış değişkenlerle regresyon yöntemi kullanarak açıklamaktır. Çalışmanın bir diğer amacı ise hangi özelliklerin hisse getirileri üzerinde daha önemli bir etkiye sahip olduğunu belirlemektir. Çalışmada yapısal faktörler olarak döviz kuru, para arzı, enflasyon, yabancı portföy yatırımı, ödemeler dengesi, altın, GSYİH kullanılırken; firma bazlı faktörler olarak likidite, karlılık, kaldıraç, varlık yapısı, fiyat-kazanç oranı, hisse başına kazanç, piyasa değeri, piyasa-defter değeri oranı, satış potansiyeli, varlık büyüme oranı, risk, büyüklük değişkenleri kullanılmıştır. Araştırmanın bulguları, on yapısal ve firma bazlı özelliklerin firma kazançları ile anlamlı bir şekilde ilişkili olduğunu işaret etmektedir. El edilen bu sonuçlara dayanarak, firma kazançları ile hem yapısal hem de firma bazlı özellikler arasında ilişki bulunduğunu söylemek mümkündür. Bu bulgulardan hareketle, bireysel ve kurumsal yatırımcılar, şirket sahipleri, yöneticiler, politika yapıcılar ve ekonomistlerin hem yapısal hem de firma bazlı özellikleri birlikte değerlendirmeleri gerektiği söylenebilir.

Anahtar Kelimeler: Hisse senedi getirileri, yapısal karakteristikler, firmaya özgü karakteristikler, standartlaştırılmış değişkenlerle regresyon

Introduction

Financial markets, which are part of the financial system, are considered mechanisms that encourage the transfer of funds from those who do not use them for production purposes to those who will use them. The primary function of these markets is to facilitate the allocation of idle resources to

investments through financial instruments (Forrest, 2014, p. 70). Additionally, financial markets promote and increase savings, thereby enabling capital accumulation and the efficient use of national funds. In this context, capital markets serve as an essential component of the financial system by bringing together medium and long-term savers with those in need of funds within a country (Büker, Aşıkoğlu and Sevil, 2008, p. 430).

In market-based economies, the most crucial function of the financial system is to ensure the efficient and effective allocation of resources, facilitate borrowing and lending activities, and consequently ensure the orderly operation of financial markets (Güzel, 2022, p. 587). Securities exchanges, the best-organized intermediaries of capital markets, fulfill this critical function while also serving numerous economic roles. The securities exchange, regarded as the barometer of the national economy, reflects changes in economic, social, and political life (Karan, 2004, p. 45).

Securities exchanges are not merely markets where stock trading decisions are made; they also serve as environments where funds are gathered, risks are distributed, and wealth is transferred (İltaş, 2020, p. 372). Parallel to the globalization of financial markets, investments in capital markets and thus in stocks have increased. In this context, as stock investments rise, the factors influencing stock returns have gained importance.

One of the primary variables that investors consider when making decisions in the securities market is stock prices. Stocks are a high-risk investment vehicle. Therefore, individual and institutional investors, particularly portfolio managers, are keen on identifying the characteristics that affect stock returns and the extent to which these characteristics impact stock returns to mitigate risks and achieve high returns. The knowledge of these characteristics and their influence on stock returns can lead to significant gains or losses for investors. This information's importance is further amplified in emerging stock markets, where gains and losses can vary significantly (Ayaydın and Dağlı, 2012, p. 46). In emerging stock markets, including those in our country, this information becomes even more crucial due to the substantial variability in gains and losses.

In this study, firm-specific and structural characteristics affecting stock returns for the period from the first quarter of 2005 to the fourth quarter of 2017 are examined using a standardized panel regression method. The data set for the study comprises 55 firms continuously traded and accessible in BIST-100 in each three-month period. Compared to existing literature, this study uniquely examines the relative importance of firm-specific and structural characteristics affecting stock returns.

Following the introduction, the theoretical and empirical literature on the subject is summarized. After the second section, which describes the data set and the model to be estimated, the third section presents the empirical findings and discusses their theoretical implications. The study concludes with results and recommendations.

Literature Review

In the finance literature, studies on stock returns predominantly focus on structural characteristics. The following sections provide information on domestic and international studies concerning the relationship between stock returns and structural as well as firm-specific characteristics, specifically within the context of Turkey and the world.

Literature on Structural Characteristics

Fama and Schwert (1977) examined the degree to which various assets provide protection against inflation. The study found that stock returns have negative relationships with both the expected and unexpected components of the inflation rate.

Abdullah and Hayworth (1993), in their study on explaining fluctuations in stock returns, employed structural characteristics using Granger causality and Sims' innovation accounting within a

vector autoregressive framework. The findings revealed that money supply, interest rates, inflation rate, and budget deficits exhibited Granger causality preceding stock returns. Additionally, they identified a positive relationship between stock returns and both money supply and inflation rate, while a negative relationship was found with interest rates, budget deficits, and trade deficits.

Granger, Huang, and Yang (1998) utilized the Granger causality method in their study to examine the relationship between stock prices and exchange rates. The results of their research demonstrated the causality between exchange rates and stock prices on a country-by-country basis.

Durukan (1999) examined the relationship between structural characteristics and stock prices in the Istanbul Stock Exchange (ISE), which is classified among emerging markets. The study utilized structural characteristics such as inflation rate, exchange rate, money supply, interest rate, and economic activity. Using the Ordinary Least Squares (OLS) method, the results of the study revealed the relationship between stock prices and these structural characteristics.

Karamustafa and Küçükkale (2002), in their study examining the relationship between stock price indices obtained from the Istanbul Stock Exchange (ISE) and structural variables, utilized the Engel-Granger and Johansen-Juselius cointegration tests, along with the Granger causality test. The research findings indicate that there is a long-term equilibrium relationship between stock returns and certain structural variables, although no causal relationship was found during the study period.

Akkum and Vuran (2005) examined the impact of structural factors on stock returns during the period of 1999-2002 in their study. The research utilized the returns of 20 companies consistently included in the ISE 30 index along with ten structural factors, including exchange rate, inflation rate, and gold prices. The results of the regression analysis indicated that the Arbitrage Pricing Theory (APT) was valid during the study period, suggesting that structural characteristics can be analyzed using APT.

In his study, Kasman (2006) examined the relationship between the volatility of structural characteristics and conditional stock market volatility using monthly data from the period 1986 to 2003. The structural characteristics considered in the study include money supply, inflation rate, exchange rate, and oil prices. The findings of the research indicate that the volatility of money supply has strong predictive power in forecasting stock market volatility.

Patra and Poshakwale (2006) investigated the relationships between structural characteristics and stock returns in the Greek stock market during the period from 1990 to 1999. The research findings indicate that there is a relationship between stock returns and both the inflation rate and money supply, whereas no relationship was found between exchange rates and stock returns. The authors also stated that the results suggest the Greek stock market is informationally inefficient, as stock prices can be predicted using publicly available structural characteristics.

Demirelli (2008) examined the relationships between the BIST National Composite Index returns and macroeconomic variables over the period 2000-2006. The study found positive relationships with exchange rates and the industrial production index, and negative relationships with money supply, inflation, and treasury bond interest rates.

In their study, Sayilgan and Süslü (2011) investigated the relationship between stock returns and seven structural variables using quarterly data from 1999 to 2006 for 11 countries. The structural variables included in the study are money supply, interest rate, exchange rate, GDP, oil prices, inflation rate, and the return on the Standard and Poor's 500 index. The research findings indicated a positive relationship between the inflation rate and stock returns, while a statistically significant negative relationship was found between the exchange rate and stock returns. Additionally, significant relationships were identified between stock returns and other structural variables such as the Standard and Poor's 500 index and oil prices.

Ayaydın and Dağlı (2012) investigated the effects of variables such as inflation rate, interest rate, industrial production index, exchange rate, S&P 500 index, and money supply on stock returns in 22 emerging markets, including Turkey, over the period 1994-2009. The study found that exchange rates, the East Asian Crisis, and the Global Financial Crisis negatively impacted stock returns, while the S&P 500 index had a positive impact. The effect of interest rates was not found to be significant.

In their study, Kaya, Çömlekçi, and Kara (2013) examined the relationship between the BIST 100 index and certain structural characteristics using data from the years 2002 to 2012. The structural characteristics used in their study included exchange rate, interest rate, money supply, and industrial production index. According to the regression analysis results conducted using the Ordinary Least Squares (OLS) method, a statistically significant and positive relationship was found between money supply and stock returns, while a statistically significant and negative relationship was found between exchange rate and stock returns.

The impact of firm-specific characteristics on stock returns has not been sufficiently addressed in the literature. This gap can be filled by investigating the combined effects of structural and firm-specific characteristics on stock returns. Such a study would contribute significantly to the existing literature.

The influence of firm-specific characteristics on stock returns has not been sufficiently addressed in the literature. This gap can be bridged by examining the combined effects of structural and firm-specific characteristics on stock returns. Such a study would contribute significantly to filling this important gap in the literature.

Literature on firm-specific characteristics

In his 1977 study empirically testing the validity of the Efficient Market Hypothesis, Basu (1977), examined the relationship between the price-earnings (P/E) ratio, a structural characteristic frequently used in the literature, and stock investment performance. The study utilized data from the New York Stock Exchange for the period from 1956 to 1971. The findings indicated that firms with low price-earnings ratios exhibited higher return performance.

Banz (1981) examined the relationship between market value, one of the firm-specific structural characteristics, and stock returns. The research revealed that firms with smaller market values, on average, provided higher risk-adjusted returns compared to firms with larger market values. This phenomenon is referred to as the size effect.

In his 1981 study empirically demonstrating that the capital asset pricing model is misspecified or that capital markets are inefficient, Reinganum (1981) examined firm-specific structural characteristics such as firm size and the price-earnings (P/E) ratio. The research findings revealed abnormal returns persisting for at least two years. Additionally, the study concluded that the firm size effect largely subsumes the impact of the price-earnings ratio.

In his Keim (1983) study, examined the empirical relationship between market value, a firm-specific structural characteristic, and stock returns using monthly data from the period 1963 to 1979. The research findings provided evidence of a negative relationship between market value and stock returns, known as the size effect.

Basu (1983) investigates the empirical relationship between stock returns and structural characteristics, specifically the price-earnings (P/E) ratio and firm size, on the New York Stock Exchange. The research findings indicate that although the stock returns of smaller firms appear to be higher than those of larger firms, this difference disappears when returns are controlled for risk and the price-earnings ratio. Additionally, the study shows that the price-earnings ratio has a significant relationship with stock returns.

Chua and Weib (1998) examined the relationship between stock returns and firm-specific structural characteristics, including market beta, book-to-market equity, and size. The research findings indicate a weak relationship between market beta and stock returns. On the other hand, while the book-to-market equity ratio can explain stock returns in some of the examined markets, the size effect is found to be significant in all but one market.

Fama and French (1998) reported that value stocks outperformed growth stocks in global markets during 1975-1995, with a mean return difference of 7.68% annually between high and low book-to-market global portfolios. An international CAPM model could not explain the value premium.

Akdeniz, Altay, and Aydoğan (2000) conducted a study on stock returns using data from non-financial companies for the period between 1992 and 1998. They employed a methodology akin to that of Fama and French (1992). The study utilized firm-specific structural characteristics, including firm size, market-to-book (M/B) ratio, price-to-earnings (P/E) ratio, and market risk variables. The findings of the research indicated that stock returns were positively correlated with the market-to-book ratio and negatively correlated with firm size.

Demir (2001) investigated the factors influencing stock prices. The study applied the least squares method using data from businesses in the financial sector for the period from 1991 to 2000. The analysis utilized financial ratios derived from balance sheet items. The study employed ten variables representing firm-specific structural characteristics, including leverage ratio, return on equity (ROE), return on assets (ROA), dividend payout ratio, price-to-earnings (P/E) ratio, market-to-book (M/B) ratio, and earnings per share (EPS). The results indicated that market-to-book ratio, earnings per share, price-to-earnings ratio, leverage ratio, return on equity, net profit growth rate, trading volume, and dividend payout ratio are significant firm-specific structural characteristics affecting stock prices in the financial sector.

Canbaş, Kandır, and Erişmiş (2007) examined the impact of firm-specific factors on stock returns of non-financial firms listed on the ISE for the period 1992-2005. They found that small firms, high-leverage firms, and high book-to-market firms had higher returns.

Methodology

This section of the study provides explanations regarding the data set, model, variables used in the study, and the analysis of the data (findings).

Research Model and Design

Data formed by combining cross-sectional and time series data is referred to as "longitudinal data" or "pooled data." If the cross-sectional units do not change and the data show variations over time within the same cross-sectional units, such data is called panel data. There are several benefits to using panel data in research. First, it significantly increases the sample size. Second, by examining repeated cross-sectional observations, it better captures changes and movements, thereby explaining these variables in terms of some other variables. Third, it provides the opportunity to study more complex models comfortably (Gujarati and Porter, 2008: 593-594).

In this study, the relationship between returns and characteristics will be estimated using the model given in Equation (1).

$$HSGYF_{it} = \alpha_{it} + \beta_1 USD_{it} + \beta_2 M2_{it} + \beta_3 OD_{it} + \beta_4 YPY_{it} + \beta_5 ENF_{it} + \beta_6 ALT_{it} + \beta_7 GSYH_{it} + \beta_8 LKD_{it} + \beta_9 KAR_{it} + \beta_{10} KLD_{it} + \beta_{11} VARY_{it} + \beta_{12} F/K_{it} + \beta_{13} HBK_{it} + \beta_{14} PD_{it} + \beta_{15} \frac{PD}{D}_{it} + \beta_{16} SP_{it} + \beta_{17} ABO_{it} + \beta_{18} RSK_{it} + \beta_{19} BYT_{it} + \varepsilon_{it} \quad (1)$$

Study Group

The data set of this research covers firms that have continuously traded in the BIST-100 index in each quarter and are outside the financial sector during the period 2005-2017. Information regarding the variables used in the study is presented in the Table 1.

Data Collection Instruments

Financial statements and stock data were obtained from the Borsa Istanbul and Public Disclosure Platform (KAP) websites, while data related to the country's structure were obtained from the CBRT EVDS system and TÜİK. The method followed in organizing the variables used in the research is detailed in Table 1.

Table 1
Variables Used in the Study

	Variable	Abbreviation	Description
Dependent Variables	Stock Price	HSG	Series created based on the closing price of the company's stock.
Structural	Exchange Rate	USD	CBRT-Exchange Rates-Effective Exchange Rates-(daily) Converted to TL-USD (US Dollar Effective Selling Rate)
	Money Supply	M2	CBRT-Money Supply and Components-M2
	Balance of Payments	OD	CBRT-Balance of Payments Detailed Presentation (million \$) Current Account
	Foreign Portfolio Investments	YPY	CBRT-Balance of Payments Detailed Presentation (monthly, million \$) Financial Account- Net Liability Formation-Equity Securities (Balance of Payments Detailed Presentation)
	Inflation Rate	ENF	CBRT EVDS-Price Indices-Consumer Price Index (2003=100) (TÜİK)-General
	Gold	ALT	CBRT-Market Data-Gold Prices (average) - Free Market Republic Gold Sales Price (TL/unit)
	Gross Domestic Product	GSY	CBRT-Production-GDP by Expenditure Approach-Current Prices (TÜİK) (Thousand TL)
Firm-Specific	Liquidity	LKD	Current Assets / Short-Term Liabilities
	Profitability	KAR	Operating Profit Margin = (Operating Profit / Net Sales) * 100
	Leverage	KLD	(Short-Term Liabilities + Long-Term Liabilities) / Total Assets
	Asset Structure	VAR	(Net Fixed Assets / Total Assets) * 100
	Price-to-Earnings Ratio	F/K	Stock Closing Price / Earnings per Share
	Earnings per Share	HBK	Net Profit / Number of Shares
	Market Value	PD	Stock Price * Number of Shares
	Market-to-Book Ratio	PD/	Market Value per Share / Book Value per Share
	Sales Growth	SP	Net Sales Growth = ((Net Sales - Previous Year's Net Sales) / Previous Year's Net Sales) * 100
	Asset Growth Rate	ABO	(Total Assets - Previous Year's Total Assets) / Previous Year's Total Assets * 100
	Risk	RSK	Standard Deviation of Operating Profit / Total Assets (i.e., Standard Deviation of Return on Assets)
	Size	BYT	Natural Logarithm of Total Assets

Data Collection and Analysis

Standardization

When variables with different measurement units need to be compared, the standardization process is employed. Standardization converts the measures of series with different measurement units, such as mean, variance, and covariance, into the same standard measure. This facilitates the comparison of different series and allows the use of standard tables, as in the normal distribution table (Güriş and Çağlayan, 2010, p. 264).

Standardization is performed by subtracting the arithmetic mean from each observation of the series and dividing the difference by the standard deviation. When applied to all units of a series, the new standardized series will have an arithmetic mean of zero and a standard deviation of one. If the series to be standardized is X_i , then the standardized series X_i^* is calculated as follows:

$$X_i^* = \frac{(X_i - \bar{X})}{\sigma_x}$$

where:

- X_i is the original value of the series,
- $\bar{X}$ is the arithmetic mean of the series,
- σ_x is the standard deviation of the series.

Research Ethics

Since secondary data were used in the study, an ethics committee approval certificate was not obtained.

Findings

In our study, the relationship between stock returns and structural as well as firm-specific characteristics has been investigated, and the results are reported in Table 2.

Table 2

Coefficients for the Relationship Between Stock Returns and Structural and Firm-Specific Characteristics

HSGYF	β Estimates	Robust Standard Error	t-Statistic	Prob.	Relative Importance of Variables
Independent Variables					
USD	-.0916885**	.0388633	-2.36	0.018	5
M2	.3600855*	.1225782	2.94	0.003	3
OD	.0438685*	.0081408	5.39	0.000	7
YPY	.0029431	.0054623	0.54	0.590	-
ENF	-.4188403*	.1003766	-4.17	0.000	2
ALT	.0822328*	.0273235	3.01	0.003	6
GSYH	.1325532	.0908597	1.46	0.145	-
LKD	.0276706	.0287024	0.96	0.335	-
KAR	-.0100944	.0151418	-0.67	0.505	-
KLD	.0141347	.0512932	0.28	0.783	-
VARY	.0245606	.0302675	0.81	0.417	-
F/K	-.0239112***	.0135265	-1.77	0.077	9
HBK	-3.49e-06*	4.74e-07	-7.36	0.000	10
PD	.8218981*	.0593433	13.85	0.000	1
PD/DD	.1012317***	.0522016	1.94	0.052	4
SP	-.042126**	.0206303	-2.04	0.041	8

ABO	.009686	.0138256	0.70	0.484	-
RSK	.0032261	.0155931	0.21	0.836	-
BYT	.008606	.0286896	0.30	0.764	-

*, **, *** indicate significance at the 1%, 5%, and 10% levels, respectively.

According to the results in Table 2, statistically significant relationships were identified between stock returns and ten of the structural and firm-specific characteristics used in the study. The analysis shows that the characteristic with the greatest relative importance for stock returns is the firm-specific characteristic of market value (PD), with a coefficient of 0.821. This is followed by inflation rate (0.418), money supply (0.360), PD/DD (0.101), exchange rate (0.091), gold (0.082), balance of payments (0.043), sales growth (0.042), price-earnings ratio (0.023), and earnings per share (0.00000349). No statistically significant relationships were found between stock returns and the structural factors of foreign portfolio investments and GSYH, nor with the firm-specific characteristics of liquidity, profitability, leverage, asset structure, asset growth rate, risk, and size.

According to the model results, the fact that the characteristic with the greatest relative importance for stock returns is a firm-specific characteristic indicates that investors consider market value as a significant criterion in their investment decisions. The results in Table 2 show that the characteristics that have a statistically significant relationship with stock returns are primarily firm-specific, followed by structural characteristics. This suggests that both firm-specific and structural characteristics can be used to predict stock returns.

When the results in Table 2 are collectively evaluated, it is evident that both firm-specific and structural characteristics have an impact on stock returns. These findings support the results of previous studies in the literature that examine the relationship between stock returns and structural as well as firm-specific characteristics.

Conclusion, Discussion, and Recommendations

It is generally accepted that stock returns can be partially predicted using publicly available structural and firm-specific characteristics. In the finance literature, some studies attempt to explain the effects of countries' structural characteristics on stock returns, while others investigate the effects of firm-specific characteristics on stock returns. Despite the belief in this relationship, the exact cause-and-effect relationships between structural and firm-specific characteristics and stock returns have not yet been fully determined.

In line with the purpose of this study, structural and firm-specific characteristics that affect stock returns in Turkey were identified using panel data analysis and standardized variable regression methods. The relationship between these characteristics and stock returns was revealed, and it was determined which of these characteristics are more influential on stock returns. For this purpose, the study employed seven structural characteristics-exchange rate, money supply, balance of payments, foreign portfolio investments, inflation rate, gold prices, and GDP-and twelve firm-specific characteristics-liquidity, profitability, leverage, asset structure, price-to-earnings ratio, earnings per share, market value, MV/BV ratio, sales growth, asset growth rate, firm risk, and firm size.

In the model examining the impact of both structural and firm-specific characteristics on stock returns, statistically significant relationships were found between stock returns and the exchange rate, money supply, balance of payments, inflation rate, gold prices, price-to-earnings ratio, earnings per share, market value, MV/BV ratio, and sales growth. The firm-specific characteristic of market value had the greatest relative impact on stock returns, followed by the structural characteristic of inflation. This finding can provide guidance for economic management in developing securities markets. Notably, the firm-specific characteristic of market value had a greater importance on stock returns than all structural characteristics. In other words, a firm-specific characteristic had a greater impact on stock returns than any structural characteristic.

Investors tend to prefer solid, transparent, and efficient markets when making decisions. Therefore, policymakers should develop policies that consider these preferences. In the context of structural characteristics, policymakers should develop and implement policies that minimize risk to increase the attractiveness of the stock market for individual and institutional investors. Similarly, in the context of firm-specific characteristics, company managers should focus on improving these characteristics to access financing sources more easily and achieve the goal of maximizing firm value from a financial management perspective.

The results of the study indicate that significant relationships exist between stock returns and many structural and firm-specific characteristics found in the literature. However, while most structural characteristics had significant relationships with stock returns, the importance of some firm-specific factors was higher than that of structural characteristics. On the other hand, no significant relationships were found with some characteristics. For instance, no significant relationship was found between stock returns and the firm-specific characteristics of liquidity, leverage, profitability, asset growth rate, and risk, which are commonly used in stock investment decisions.

Based on the results of the study, both individual and institutional investors, firm owners, managers, policymakers, and economists should consider both structural and firm-specific characteristics together. In this context, the findings of the study support the results of studies conducted in both Turkey and abroad.

The impact of structural and firm-specific characteristics on stock returns in developed countries could serve as a distinct research topic. Furthermore, examining whether there are differences in the effects of structural and firm-specific characteristics on stock returns across various sectors could constitute another significant area of study.

Contribution Rate of Researchers

The contribution rate of the first author to the research is 50% and the contribution rate of the second author is 50%.

Conflict of Interest

There are no conflicts of interest related to this study.

Acknowledgment and/or Explanation: This study is based on the doctoral dissertation titled "A Comparative Analysis of Structural and Firm-Specific Characteristics Affecting Stock Returns in Turkey," conducted by PhD student İsmail Doğan under the supervision of Prof. Dr. Güven Sevil in the Department of Finance, Business Administration at the Graduate School of Social Sciences, Anadolu University.

Kaynaklar

- Abdullah, D.A. and Hayworth, S. C.(1993). Macroeconometrics of stock price fluctuations. *Quarterly Journal of Business and Economics*, 32(1).
- Akdeniz, L. Altay, A. Aydoğan and Aydoğan, K. (2000). A cross-section of expected stock returns on the İstanbul stock exchange. *Russian and East European Finance and Trade*, 36(5).
- Akkum, T. ve Vuran, B. (2005). Türk sermaye piyasasındaki hisse senedi getirilerini etkileyen makroekonomik faktörlerin arbitraj fiyatlama modeli ile analizi. *İktisat İşletme ve Finans*, 20(233).

- Ayaydın, H. ve Dağlı, H. (2012). Gelişen piyasalarda hisse senedi getirisini etkileyen makroekonomik değişkenler üzerine bir inceleme: Panel veri analizi. *Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi*, 26(3-4).
- Banz, R. W. (1981). The relationship between return and market value of common stocks. *Journal of Financial Economics*. 9.
- Basu, S. (1977). Investment performance of common stocks in relation to their priceearnings ratios: a test of the efficient market hypothesis. *The Journal of Finance*. 32(3).
- Basu, S. (1983). The relationship between earnings' yield, market value and return for NYSE common stocks. *Journal of Financial Economics*. 12.
- Büker, S. Aşıkoğlu, R. ve Sevil, G. (2008). *Finansal Yönetim* (4. Baskı). Ankara: Sözkese Matbaacılık Tic. Ltd. Şti.
- Canbaş, S. Kandır, S. Y. ve Erişmiş, A. (2007). Hisse senedi verimini etkileyen bazı şirket özelliklerinin İMKB şirketlerinde test edilmesi. *Finans Politik & Ekonomik Yorumlar*, 44(512).
- Chua, A. C. W. and Weib, K. C. J. (1998). Book-to-market, firm size, and the turn-of-the-year effect: evidence from pasific-basin emerging markets. *Pasific-Basin Finance Journal*.
- Demir, Y. (2001). Hisse senedi fiyatını etkileyen işletme düzeyindeki faktörler ve mali sektör üzerinde imkb'de bir uygulama. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi* 6(2).
- Demireli, E. (2008). Etkin Pazar kuramından sapmalar: finansal anomalileri etkileyen makro ekonomik faktörler üzerine bir araştırma. *Ege Akademik Bakış*. 8(1).
- Durukan, M. B. (1999). İstanbul menkul kıymetler borsasında makroekonomik değişkenlerin hisse senedi fiyatlarına etkisi. *İMKB Dergisi* 3(11).
- Ege, İ. ve Bayrakdaroğlu, A. (2009). İmkb şirketlerinin hisse senedi getiri başarılarının lojistik regresyon tekniği ile analizi. *ZKÜ Sosyal Bilimler Dergisi*. 5(10).
- Fama, E. F. and Schwert, G. W. (1977). *Asset returns and inflation*. *Journal of Financial Economics*. 5.
- Fama, E. F. and French, K. R. (1998). Value versus growth: the international evidence. *The Journal of Finance*. 53(6).
- Forrest, J. Y.-L. (2014). *A Systems Perspecti ve On Financial Systems* (6. Edition). CRC Press.
- Granger, C. W. J. Huang, B. and Yang, C. W. (1998). A bivariate causality between stock prices and exchange rates: evidence from recent asia flu. *Recent Work, Department Of Economics, UCSD, UC San Diego*.
- Gujarati, N. D. and Porter, C. D. (2008) *Basic Econometrics*. McGraw-Hill Irwin
- Güriş, S. ve Çağlayan, E. (2010) *Ekonometri Temel Kavramlar* (Genişletilmiş 3. Basım) İstanbul Der Yayınları

- Güzel, A. (2022). Faiz Oranları ve Döviz Kurlarındaki Değişimlerin Bankaların Performansına Etkisi: Sistemik Yaklaşım ve Duyarlılık Analizini de İçeren Stres Testi Model Uygulaması. 3. Sektör Sosyal Ekonomi Dergisi, 57(1), 586–611.
- İltaş, Y. (2020). Farklı Risk Türleri ve Borsa Endeksi Arasındaki İlişki: Türkiye İçin Nedensellik Testleri. *Business and Economics Research Journal*, 11(2), 371–384.
- Karamustafa, O. and Küçükkale, Y. (2002) Long run relationships between stock market returns and macroeconomic performance: evidence from Turkey. 6. *Türkiye Finans Eğitimi Sempozyumu*. Aralık / Isparta (2002).
- Karan, B. M. (2004). Yatırım Analizi ve Portföy Yönetimi (1. Basım). Gazi Kitabevi.
- Kasman, S. K. (2006). Hisse senedi getirilerinin oynaklığı ile makroekonomik değişkenlerin oynaklığı arasındaki ilişki. *İMKB Dergisi* 8(32).
- Kaya, V. Çömlekçi, İ. ve Kara, O. (2013). Hisse senedi getirilerini etkileyen makroekonomik değişkenler 2002-2012 Türkiye örneği. *Dumlupınar Üniversitesi Sosyal Bilimler Dergisi*. Sayı 35.
- Keim, D. B. (1983). Size-related anomalies and stock return seasonality: further empirical evidence. *Journal of Financial Economics*. 12.
- Patra, T. and Poshakwale, S. (2006). Economic variables and stock market returns: evidence from the Athens stock exchange. *Applied Financial Economics*, 16.
- Reinganum, M. R. (1981). Misspecification of capital asset pricing: empirical anomalies based on earnings' yields and market values. *Journal of Financial Economics*. 9(1).
- Sayılğan, G. ve Süslü, C. (2011). Makroekonomik faktörlerin hisse senedi getirilerine etkisi: Türkiye ve gelişmekte olan piyasalar üzerine bir inceleme. *BDDK Bankacılık ve Finansal Piyasalar*. 5(1).

Genişletilmiş Özet

Giriş

Finansal sistemin unsurlarından biri olan finansal piyasalar ve bu piyasalardaki araçlar fon fazlası olanlardan fon talep edenlere doğru fon aktarımı sağlamaktadır. Ayrıca finansal piyasalar tasarrufları arttırarak kaynakların daha etkin kullanılmasına da katkı sağlamaktadır. Finansal piyasaların en iyi organize olmuş araçları olan menkul kıymetler borsaları bu önemli işlevi gerçekleştirirken ülke ekonomisinin barometresi olarak da kabul edilir. Günümüzde küreselleşme finansal piyasalarda da etkisini göstermiş finansal piyasaların küreselleşmesi bu piyasaların gelişmesine, piyasalara yapılan yatırım tutarlarının artmasına ve dolayısı ile bu piyasalardaki hisse senedi yatırımlarının artmasına neden olmuştur. Araştırmamızın da uygulama alanı olan ve gelişmekte olan piyasalar arasında yer alan Türkiye, gelişen piyasalara yatırım yapmak ve portföy çeşitlendirmesi yapmak isteyen uluslararası yatırımcıların da ilgisinin artmasına neden olmaktadır.

Finansal piyasaların gelişmesi ve bu piyasalara olan ilginin artması, yapılan yatırım tutarlarının büyümesi gibi gelişmeler sermaye piyasalarının önemli araçlarından olan hisse senetlerinin getirisini etkileyen karakterlerin önemini arttırmıştır. Hisse senetleri yatırımcıları açısından yüksek riskli bir varlıktır. Hisse senedi yatırımcısı bu yüksek riskten ve belirsizlikten korunmak için hangi karakterlerin hisse senedi getirisini etkilediği bilgisine ihtiyaç duymaktadır. Hisse senedi getirisini etkileyen karakterlerin neler olduğu önemli bir araştırma konusudur. Bu konuda yapılan araştırmaların büyük kısmı ülkelerin yapısal karakteristiklerini hisse senedi getirileri üzerine odaklanmıştır. Diğer taraftan firmaya özgü karakteristiklerin getiriler üzerine etkisi literatürde yeterince yer verilmemiştir. Araştırma bu amaçla yapısal ve firmaya özgü karakteristiklerin birlikte kullanılarak hisse senedi getirisi üzerindeki etkisini ortaya koyarak literatüre katkı sağlayacaktır.

Araştırmanın amacı panel veri standartlaştırılmış değişkenler ile regresyon yöntemini kullanarak yapısal ve firmaya özgü karakteristiklerin Borsa İstanbul'daki hisse senedi getirileri üzerindeki ilişkiyi incelemektir. Çalışmada hisse senedi getirileri ile ilişkili karakteristiklerin önem dereceleri tespit edilmeye çalışılacaktır.

Yöntem

Araştırma 2005- 2017 döneminde BİST-100 endeksinde tüm çeyreklerde işlem gören ve verileri kesintisiz elde edilebilen mali sektör harici firmaları kapsamaktadır. Araştırma kapsamında literatüre hisse senedi getirileri ile ilişkili olarak en sık kullanılan yedi yapısal ve on iki firmaya özgü olmak üzere toplam on dokuz karakteristik kullanılmıştır. Firmaya özgü bilgiler arasında yer alan mali tablo ve hisse senedi bilgileri Kamuoyunu Aydınlatma Platformu (KAP) ve Borsa İstanbul'dan yapısal karakteristiklere ilişkin bilgiler ise Türkiye İstatistik Kurumu (TÜİK) ve Türkiye Cumhuriyet Merkez Bankası Elektronik Veri Dağıtım Sistemi (TCMB EVDS) üzerinden elde edilmiştir. Araştırmada panel veri standartlaştırılmış değişkenlerle regresyon yöntem kullanılmıştır. Standartlaştırma ölçüm birimleri farklı olan değişkenleri karşılaştırmak amacıyla kullanılan bir yöntemdir. Bu yöntemde serilerin ölçüm farklarının ortadan kaldırılması için serilerin düzey değerlerinden aritmetik ortalamaları çıkarılarak ulaşılan değer yine o serinin standart sapmasına bölünerek gerçekleştirilir. Elde edilen standartlaştırılmış değişkenlerle panel veri regresyon yöntemi ile yapısal ve firmaya özgü karakteristiklerin hisse senedi getirileri üzerindeki etkisi önem derecesi olarak ortaya konmuştur.

Bulgular

Bu araştırmada hisse senedi getirisi ile yapısal ve firmaya özgü değişkenler arasındaki ilişki ortaya konmuştur. Araştırmada standartlaştırılmış değişkenlerle panel veri regresyon yöntemi ile hisse senedi getirileri ile yapısal ve firmaya özgü karakteristikler arasındaki ilişkilerin incelendiği model bulgularına göre on karakteristiğin hisse senedi getirileri ile istatistiksel olarak anlamlı ilişkisi elde edilmiştir. Araştırma bulguları nispi önem sırasına göre en yüksek öneme sahip değişkenin firmaya

özgü değişkenlerden piyasa değeri (PD) olduğunu göstermiştir. Anlamlı ilişki bulunan değişkenler nispi önem sırasına göre ifade edildiğinde sırasıyla enflasyon oranı, para arzı, PD/DD, döviz kuru, altın, ödemeler dengesi, satış potansiyeli, fiyat kazanç oranı ve hisse başı kar şeklindedir. Diğer taraftan araştırmada kullanılan GSYH, yabancı portföy yatırımları, aktif büyüme oranı, likidite, kaldıraç, karlılık, varlık yapısı, risk ve boyut değişkenleri ile hisse senedi getirileri arasında istatistiksel olarak anlamlı bir ilişki elde edilememiştir. Araştırma bulguları nispi önem açısından ele alındığında hisse senedi getirilerini etkileyen en önemli karakteristiğin firmaya özgü bir değişken olan PD olduğunu göstermiştir. PD hisse senedi yatırımcılarının bir karar kriteridir. Ayrıca bulgular hem firmaya özgü hem de yapısal değişkenlerin hisse senedi getirisinin tahmininde kullanılabileceğini göstermiştir.

Sonuç, Tartışma ve Öneriler

Hisse senedi getirilerini etkileyen karakteristikler finans literatüründe ilgi çeken bir konudur. Hisse senetleri yüksek riskli bir menkul kıymettir. Bu yüksek risk hisse senedi yatırımcısı için yüksek kazanç/kayıp doğurabilmektedir. Kazanç ve kayıpların büyük olması sebebiyle hisse senetlerinin getirisini etkileyen karakteristiklerin neler olduğunun ortaya konması yatırımcı açısından daha da önem arz etmektedir. Hisse senedi getirilerini etkileyen ülke ekonomisine ilişkin yapısal göstergelere yönelik araştırmalara literatürde daha sık rastlanmasına rağmen firmaya özgü karakteristiklerin hisse senedi getirisine etkisi yeterince yer verilmemiştir. Araştırmanın amacından yola çıkarak panel veri standartlaştırılmış değişkenlerle regresyon yöntemi aracılığıyla Borsa İstanbul'daki hisse senedi getirileriyle gerek yapısal gerekse firmaya özgü karakteristikler birlikte ele alınarak aralarındaki ilişki belirlenmiştir. Diğer taraftan incelenen değişkenlerin hisse senedi getirileri üzerindeki nispi önemi ortaya konmuştur. Hisse senedi getirisi ile altın, enflasyon oranı, para arzı, ödemeler dengesi, döviz kuru, piyasa değeri (Keim, 1983), hisse başı kar (Demir, 2001), PD/DD oranı (Canbaş, Kandır ve Erişmiş, 2007; Chuia ve Weib, 1998; Fama ve French, 1998), fiyat kazanç oranı (Reinganum, 1981; Basu, 1977; Basu 1983; Banz, 1981; Canbaş, Kandır ve Erişmiş, 2007; Demir, 2001) ve satış potansiyeli arasında istatistiksel olarak anlamlı ilişki bulunduğu sonucuna ulaşılmıştır. Yine bu karakteristiklerin hisse senedi getirisi üzerindeki nispi önem sıralamasına bakıldığında en önemli etkiye sahip karakteristik firmaya özgü bir karakteristik olan piyasa değeridir. Hisse senedi getirisi üzerinde nispi önem sırasına göre anlamlı bulunan karakteristiklerin sırasıyla enflasyon oranı (Akkum ve Vuran, 2005; Demirelli, 2008; Fama ve Schwert, 1977), para arzı (Abdullah ve Hayworth, 1993; Ayaydın ve Dağlı, 2012; Kaya, Çömlekçi ve Kara, 2013 ; Sayılğan ve Süslü, 2011), PD/DD oranı, Döviz kuru (Ayaydın ve Dağlı, 2012; Granger, Huang and Yang, 1998; Sayılğan ve Süslü, 2011), altın, ödemeler dengesi (Abdullah ve Hayworth, 1993), satış potansiyel, fiyat kazanç oranı, hisse başı karıdır. Firmaya özgü karakteristiklerden piyasa değerinin hisse senedi getirilerini etkileyen tüm yapısal karakteristiklerden daha büyük bir nispi öneme sahip olması önemli bir sonuçtur. Yatırımcılar hisse senedi yatırımı yaparken gerek yapısal gerekse firmaya özgü karakterleri birlikte değerlendirmeyi tercih edeceklerdir. Diğer taraftan politika üretirken yatırımcıların bu tercihlerine uygun politikalar ortaya koymalıdır. Sermaye piyasaları üzerinde yatırımcıların cazibelerini arttıracak ve risklerini düşürebilecek politikalar üretip bu politikaları uygulayabilmelidirler. Araştırma sonuçları firmaya özgü karakteristikler açısından değerlendirildiğinde ise firma idarecileri piyasa değeri, hisse başı kar, PD/DD oranı, fiyat kazanç oranı ve satış potansiyeli gibi karakteristiklerde yapacakları iyileştirmelerle finansman kaynaklarına daha kolay ulaşabilirler ve değer maksimizasyonu amacına varabilirler. Araştırma sonuçları sermaye piyasasında yer alan gerek yatırımcıları gerek işlem gören firmaların gerekse politika yapımcıların hisse senedi getirilerini etkileyen yapısal ve firmaya özgü karakteristiklerin karar kriteri olarak birlikte kullanılabileceğini göstermiştir. Araştırma sonuçları literatürde yapılan çalışmaların sonuçlarını desteklemektedir. Yapısal ve firmaya özgü karakteristiklerin gelişmiş ülkelerdeki hisse senedi getirileri üzerindeki etkisi bir başka araştırma konusu olabilir. Bu her iki ekonomiler açısından karşılaştırma fırsatı verebilir. Ayrıca hisse senedi getirisine etkisi incelenen bu karakteristiklerin sektörel olarak bir farklılık gösterip göstermediği de bir araştırma konusu olabilir. Son olarak bu araştırmada kullanılmayan yapısal ve firmaya özgü karakteristikler farklı dönemlerde yeni yöntemlerle araştırılabilir.