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Determination of Significant Financial Ratios That May Influence Business Stock Performance

İşletmelerin Borsa Performansını Etkileyen Finansal Oranların Belirlenmesi

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Abstract : İn this research article, the determination of financial ratios that are significant on the stock market performance of manufacturing firms has been studied. For this purpose, 89 manufacturing companies were included in the analysis. Panel data analysis and annual data for 2013-2018 are used. In the study, market value-book value was taken as dependent variable. Liquidity ratio, current ratio, receivable turnover rate, asset turnover rate, stock turnover rate rate, short-term debts / long-term debts, interest and pre-tax profit / interest expense, asset return rate and return on equity were included as independent variables. The return on assets, which is one of the significant variables, positively affects the stock market performance of the manufacturing companies. The liquidity ratio, credit turnover rate and return on equity rates negatively affect the stock market performance of the manufacturing companies. It has the highest coefficient active return in the findings, while it has the lowest coefficient turnover rate. According to the findings obtained, it was find out that the variables of current ratio, inventory turnover, short-term debts / long-term debts, asset turnover, interest and pre-tax profit / interest expense did not affect the stock market performance of manufacturing enterprises.

Structured Abstract : The increasing importance of stock markets around the world encourages investors to explore the factors and variables that affect stock market performance. Whether the financial variables are related to the stock market performance is found interested to researchers as well as to investors. With this research, the future price movements of stocks are tried to be predicted and investors' earnings are expected to be increased. In this context, the financial ratios that impact the stock market performance of manufacturing companies traded on Borsa Istanbul are examined. In the research, panel data analysis was applied to 89 manufacturing enterprises between the years of 2013 and 2018. In the analysis of the research, market value-book value was taken as dependent variable. Liquidity and current ratios, receivable turnover, asset turnover, stock turnover rate, short-term debts / long-term debts, interest and pre-tax profit / interest expense, asset return rate and return on equity were included as independent variables

When the studies in the literature are evaluated as a whole, it is seen that the book to market value (BTM), which expresses the stock market performance of enterprises, is used less as the performance measure

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of the ratio. However, the market value of the shares representing the share portion of this variable and rate of return is widely used in the literature.

In most studies in the literature, firstly, the suitability of panel data to the classical model, fixed effects and random effects model was investigated. As a result of the preliminary tests conducted in our study, it was found that the data were more appropriate to the fixed effects model. Panel data can be defined as time series of a plurality of sections or section data with a time dimension. Due to these characteristics, panel data allow many different observations on the same sampling unit (Özer & Çiftçi, 2009: 41).

In the analysis, the correlation matrix of the variables and the unit root test results were firstly included. Then, Breusch-Pagan Lagrange Multiplier test, Hausman test, Modified Wald test, Durbin-Watson, Baltagi-Wu and Pesaran tests were applied. Finally, the fixed effects regression was estimated using the Arellano, Foot and Rogers estimator.

As a result of the analysis, return on equity (T9), receivables turnover (T3) and return on assets (T8) were found to be significant at 1% significance level. On the other hand, the liquidity ratio (2) was found to be significant on the stock market performance of manufacturing enterprises.According to the results, while liquidity ratio, receivables turnover and return on equity have negative effects on stock market performance, asset profitability has a positive effect. it was determined that liquidity ratio, credit turnover rate, active profitability and equity profitability are significant on stock market performance. When these rates are examined in the literature, it is seen that they have different results besides similar results. Kurtaran et al. (2015) found the liquidity ratio significant, while the opposite Demireli, Basci & Karaca (2014) found it insignificant. Savar (2012) found that the receivable turnover rate is significant. However; Demireli, Basci & Karaca (2014), on the other hand, proved to be insignificant. When the return on assets in the literature is analyzed; Buse & Stefan (2014), Kurtaran et al. (2015) and Özcalık & Aytekin (2017) showed that they are significant on stock market performance. When the return on equity is examined; Robu, Jaba, Mironiuc & Robu (2014), Sharif, Purohit & Pillai (2015) and Ünaldı (2018) found significant on stock market performance. However; Anwaar (2016) and Özçalık & Aytekin (2017) have revealed that they are be insignificant on stock market performance.

As it can be seen from the results of the analysis, it can be said that the earnings expected by the investors are affected by the changes in the return on assets and return on equity. According to the findings, it is quite fair to reach the conclusion that investors who invest in stocks by taking these two ratios into consideration can provide a higher return than normal rate. Researchers will be able to use different dependent variables representing stock market performance. They can also use macroeconomic variables and some non-financial variables in addition to financial ratios used as independent variable.

Keywords: Stock Market Performance, Book To Market Value, Panel Data, Financial Ratios

Öz: Bu araştırma makalesinde, imalat işletmelerinin borsa performansı üzerinde anlamlı olan finansal oranların tespiti çalışılmıştır. Bu amaçla, 89 imalat işletmesi çalışmanın analizine dahil edilmiştir. Araştırmada panel veri analizi ve 2013-2018 dönemine ait yıllık veriler kullanılmıştır. Panel veri modelinde, piyasa - defter değeri bağımlı değişken olarak alınmıştır. Likidite oranı, cari oran, alacak devir hızı, aktif devir hızı, stok devir hızı, faiz ve vergi öncesi kar / faiz gideri, kısa vadeli borçlar / uzun vadeli borçlar, aktif getiri ve özkaynak getiri oranları bağımsız değişken olarak analizde yer almıştır. Bulgulara göre, likidite oranı, alacaklar devir hızı, özkaynak getirisi ve aktif getirisi değişkenleri imalat sektöründeki işletmelerin borsa performansını anlamlı olarak etkilemektedir. Anlamlı değişkenlerden aktif getirisi, imalat sektöründeki işletmelerin borsa performansını pozitif yönde etkilemekte; likidite oranı, alacak devir hızı ve özsermaye getiri oranları ise imalat sektöründeki işletmelerin borsa performansını negatif yönde etkilemektedir. Bulgulara göre en yüksek katsayıya aktif getirisi sahipken en düşük katsayıya alacak devir hızı sahiptir. Ayrıca analiz bulgularında, cari oran, stok devir hızı, aktif devir hızı, faiz ve vergi öncesi kar / faiz gideri ve kısa vadeli borçlar / uzun vadeli borçlar değişkenlerinin ise imalat sektöründeki işletmelerin borsa performansına etki etmediği saptanmıştır.

Anahtar Kelimeler: Borsa Performansı, Piyasa Değeri Defteri, Panel Veri, Finansal Oranlar

1. Introduction

One of the risky investment instruments of interest to investors is the stocks of the enterprises. Investors' expectation is to gain from the price changes of stocks and thus increase their wealth. In order for stock investors to gain the expected earnings, business owners or partners should analyze the market value of the capital of TL 1 and the performance of the companies in the stock market. Because, as everyone knows, higher returns are associated with higher risks.

The increasing importance of stock markets around the world encourages investors to explore the factors and variables that affect stock market performance. Whether the financial variables are related to the stock market performance is found interested to researchers as well as to investors. With this research, the future price movements of stocks are tried to be predicted and investors' earnings are expected to be increased. On the other hand, the stock market performance of enterprises attracts the attention of investors all over the world due to the high returns expectation.

In this research, , the determination of financial ratios that are significant on the stock market performance of manufacturing firms has been studied. In this study, panel data analysis was applied to 89 manufacturing enterprises between the years of 2013 and 2018. In the analysis of the research, book to market value (BTM) which expresses the stock market performance, is used as the dependent variable. Liquidity and current ratios, receivables turnover, asset turnover, stocks turnover, short term liabilities / long term liabilities, profit before interest and tax / interest expense, return on assets and return on equity are used as independent variables.

This context study consists of five chapters. In the first chapter, general information on the subject; in the second part, literature; in the third chapter, the data and methods used; in the fourth section, the analysis and in the last section, the evaluation of the results is given.

2. Literature

This section examines some of the studies that have been done to determine the effective financial ratios on stock market performance.

Lewellen (2004) examined whether financial ratios can predict the performance of stocks. In the study which investigated the period of 1986-2004 with fixed effects model, Hobarth (2006) investigated the correlation between financial factors and stock market performances of listed companies in the USA. In another study, Savsar (2012) revealed a significant positive correlation between receivables turnover and firm value.

In the study using the enterprises in the manufacturing sector, Özçomak & Gündüz (2012) investigated the financial ratios that affect stock market performance (price / earnings, dividend yield, earnings per share and stock value).

Bektas & Tekin (2013) showed that asset profitability and BTM ratio are correlated as a result of the study investigating financial ratios and stock market performance. In the study based on the years 1998-2010, Demireli, Basci & Karaca (2014) found that sales on BTM are significant and receivables turnover and liquidity ratio are insignificant.

In their study, Buse & Stefan (2014) aimed to determine the type, intensity and direction of the relationships between some financial performance and economic indicators with stock market performance indicators. According to the results, they found a relationship between market value and profitability.

Robu, Jaba, Mironiuc & Robu (2014) investigated the effect of financial factors on the performance of stocks. They stated that return on equity is important in their research.

Pech, Noguera & Beyaz (2015) used panel regression analysis in their studies for the period 1995-2011 and the relationship between returns on stocks and financial ratios.

In the study aiming to find out the factors affecting stock prices in Bahrain, Sharif, Purohit & Pillai (2015) used panel data analysis with 41 enterprises for the period 2006 - 2010. They found that return on equity is an important determinant of the performance of stocks.

According to Sharif, Purohit & Pillai (2015), the investigation of the factors determining the stocks was made by Collins (1957) for the first time in the US market.

As a result of the study examining the stock market performance of enterprises in the manufacturing sector, Akbulut & Coskun (2015) stated that there is insignificant relationship between performance scores and BTM.

In the studies investigating the ratios related to firm value, Kurtaran et al. (2015) included 45 enterprises in the analysis for the period 2008-2012. As a result of their studies using multiple regression, they found a positive correlation between return on assets and liquidity with firm value, and a negatively correlation between current ratio and firm value.

In the study of the effect of financial ratios on the performance of stocks, Anwaar (2016) stated that active profitability has a significant positive effect. It was found that return on equity and turnover ratios had insignificant effect on stock returns.

Özçalık & Aytekin (2017) used the financial ratios of 115 manufacturing industry companies listed on Borsa Istanbul for the years 2005-2014. The results show that asset profitability, current ratio and net sales have positive effects on market value; asset turnover and leverage ratio were found to affect negatively. They found that there was no significant result between the return on equity ratio and market value.

The study investigating the rates affecting the stock market performance of venture capital investment trusts, Ünaldı (2018) applied panel data analysis for the period of 2011-2017. According to the finding of the analysis, it was found that the return on equity had a positive effect on the BTM

When the studies in the literature are evaluated as a whole, it is seen that the BTM, which expresses the stock market performance of enterprises, is used less as the performance measure of the ratio. However, the market value of the shares representing the share portion of this variableand rate of return is widely used in the literature.

In the study of Tarazi & Gallato (2012), "(to Fama & French (1992), there is a significant relationship between market-book value and stock return") also “Stattman found that there is a positive relationship between market-book value ratio and expected stock returns” have expressed.

3. Method

In this study, panel data analysis method was used to examine the relationship between financial performance and stock market performance of manufacturing enterprises. For this reason, data of 89 enterprises, which are also traded in Istanbul stock market, in the manufacturing sector for the period 2013-2018 were used.

In most studies in the literature, firstly, the suitability of panel data to the classical model, fixed effects and random effects model was investigated. As a result of the preliminary tests conducted in our study, it was found that the data were more appropriate to the fixed effects model.

Panel data can be defined as time series of a plurality of sections or section data with a time dimension. Due to these characteristics, panel data allow many different observations on the same sampling unit (Özer & Çiftçi, 2009: 41).

Since 1960’s, researchers have found panel data analysis useful in studying economic topic involving individual economic agents in time. a wide range of useful and important panel sets have been created and are now available in electronic form. Some of these panel sets, like the Penn-World

tables, industries, cover diffcrent individuals, and countrics have been useful in comparing and assessing growth characteristics over long time periods, like GDP growth (Phillips & Moon, 2000: 263-264).

Panel data analysis, by blending the intra individual dynamics and inter-individual differences, has some advantages over time- series data or cross -sectional: More accurate inference of model parameters-greater capacity for capturing the complexity of human behavior than time series or a single cross-section data- simplifying statistical inference and computation (Hsiao, 2007: 3).

The following formula refers to the panel data analysis model called the fixed effects model, i.e. (Spicka, Naglova & Gurtler, 2017: 359).

$$y_{it} = \alpha + x'_{it}\beta + ut_{it} \quad [i = 1, \dots, N\,; t = 1, \dots, T] \tag{1}$$

where i denotes the cross-section and t the time-series dimensions. Henceforth let i be a slower index. So, y_{it} is an observation of a dependent factor for *(i-th)* unit in time *t;* α is a scalar common to all entities; is (*it-th)* row of ($NT \times K$) matrix X, which contains the observed values of K regeressors; β is a K-dimensional parametric vector; and for u_{it} we can write:

$$u_{it} = \mu_i + v_{it} \tag{2}$$

when μ_i is time independent and an unobservable individual specific effect, or fixed effect, for *i-th* unit and v_{it} is an iid disturbance term with variance σ and mean zero.

In the analysis of the study, independent and dependent variables of 89 enterprises in the manufacturing sector for the years between 2013 and 2018 are used. These financial ratios used in the analysis are given in table 1.

Table 1: Variables used in analysis

Dependent Variable	**Formula**	**Code**
Book to Market	Market value/ Book value	BTM
Bağımsız Değişkenler	**Formula**	
Current ratio	Current assets / Short-term liabilities	T1
Liquidity ratio	(Current asset - Stocks) / Short term liabilities	T2
Receivables turnover	Sales / Receivables	T3
Asset turnover	Sales / Asset	T4
Stocks turnover	Stocks / Cost of goods sold	T5
Short term liabilities / Long term liabilities	Short-term liabilities / Long term liabilities	T6
Profit before interest and tax / Interest expense	Profit before interest and tax / Interest expense	T7
Asset profitability	Net profit / Assets	T8
Equity profitability	Net profit / Shareholders' equity	T9

The financial statements of these variables were obtained from the Public Disclosure Platform (PDP) and the market values of the companies' shares were obtained from the Investing.com website. The rates were calculated individually to be used in the analysis and Panel analysis was performed by using Stata 12 program.

4. Analysis Results

In this study, the determination of the significant financial ratios that impact the stock market performance of 89 firms in manufacturing sector was investigated by panel data method. In this context, the data of enterprises between 2013 and 2018 period were included in the analysis of the research.

With panel data analysis, it is aimed to determine the significance, direction and effect of the variables that affect the stock market performance of manufacturing enterprises.

Book to market (BTM) value of enterprises was used as dependent variable. Liquidity and current ratio, receivables turnover, asset turnover, stock turnover, short term liabilities / long term liabilities, profit before interest and tax / interest expense, asset return rate and return on equity were included in the analysis as independent variables.

In the analysis of the research, the correlation matrix of the variables and the unit root test results were firstly included. Then, Breusch-Pagan Lagrange Multiplier test, Hausman test, Modified Wald test, Durbin-Watson, Baltagi-Wu and Pesaran tests were applied. Finally, the fixed effects regression was estimated using the Arellano, Foot and Rogers estimator.

In this context, the relationship between the financial ratios was investigated by correlation analysis. The results of the correlation analysis of the financial ratios are given in table 2.

Table 2: Correlation matrix of financial ratios

	T1	T2	T3	T4	T5	T6	T7	T8	T9
T1	1.0000								
T2	.3392	1.0000							
T3	.0376	-.0276	1.0000						
T4	-.0379	.1063	-.0085	1.0000					
T5	.3141	.2889	-.0473	.2213	1.0000				
T6	-.0383	.1583	-.0085	.2364	.3550	1.0000			
T7	.0813	.0154	-.0037	-.0081	-.0285	-.0211	1.0000		
T8	.5208	.2770	-.0696	.0517	.2826	.0302	-.0010	1.0000	
T9	.0937	.0549	-.0129	-.0497	.0547	-.2445	.0010	.2528	1.0000

When the results of the correlation analysis in Table 2 are examined, it is found that there is no high relationship between the variables.

The unit root tests commonly used in panel econometrics are LLC tests (Levin et al. 2002). The alternative “HA: serial unit does not contain root” is tested against the null hypothesis “H0: serial unit contains root”.

The panel unit root test was applied to each variable to make the ratios used in the analysis appropriate to the panel data analysis. The unit root test results of the variables included in the analysis are given in table 3.

Table 3: Unit root test of financial ratios

Değişkenler	**Levin, Lin & Chu (LLC)**	
	İstatistik Değeri	**Olasılık Değeri**
Y1	-11.3911	0.001
T1	-18.6813	0.009
T2	-16.8555	0.000
T3	-21.4990	0.010
T4	-20.4658	0.006
T5	-12.4991	0.000
T6	-14.8371	0.005
T7	-39.0910	0.010
T8	-14.8564	0.000
T9	-10.1199	0.010

When the analysis results of panel unit root tests were examined, it was seen that there was no unit root in the series. Therefore, the financial ratios were adapted to the analysis.

In the fixed effects model, the results of the Breusch-Pagan Lagrange Multiplier to test for the presence of the unit effect are given in table 4.

Table 4: Breusch - Pagan test

Test:Var(u)	**0**
Chi2 (01)	**496.24**
Prob(chi2)	**.0000**

With this test, the hypothesis (H0:σ2μ =0) that the variance of random unit effects is zero is tested. The test statistic is compared with 1 degree of freedom and X^2 table. Therefore, the hypothesis that the variance of the unit effects is equal to zero is rejected, so the classical model is not appropriate.

As shown in Table 4, the probability value is less than 5%, which means that the model is not a classical model.Therefore, it should be investigated whether the model is random or fixed effects.

Hausman (1978) test is often used to decide between random and fixed effects model (Clark & Linzer, 2012:10).

The Hausman test compares the fixed against random model under the null hypothesis that the individual effects are no correlated with the other regressors in the model. If correlated (H_0, is rejected), a random effect roduces biased estimators, violating one of the Gauss - Markov assumptions; therefore a fixed effect is preferred (Hausman, 1978 ; Srinivasan, 2012: 212-213).

The Hausman test was used to decide whether the random effects model or the fixed effects model should be chosen. The results of this test are given below.

Tablo 5: Hausman test

Chi2 (6)=(b-B)'[(V_b-V_B)$^{(-1)}$] (b B)	**15.87**
Prob > chi2	**.0443**

The test statistic is tested against the X^2 table with a degree of freedom equal to the number of parameters. The probability value was determined as 0.0443. Since the H_0 hypothesis was rejected, the random effects incoherent was inconsistent and the fixed effects estimator was valid.

Once the model is identified, different variance (heteroskedasticity) and autocorrelation from the assumptions of the fixed effects model should be tested.

If the variance is changing, this is called heteroskedastic and if the error term has constant variance, this is called homoscedastic. The expected value of the error term is assumed to be zero.

When researchers examine a cross-section of firms, heteroscedasticity can be seen. E.g., it seems acceptable that error terms associated with large firms will have greater variance than those associated with small firms. The assumption that errors corresponding to different observations are not dependent is important for both cross-section studies and time-series (Hobarth, 2006: 68).

In the fixed effects model, the Modified Wald Test was used to test for the presence of different variance (heteroskedasticity). The results of this test are given below.

Table 6: Wald test

H0: sigma (i)^2 = sigma^2	
Ki-kare(89)	**1.0e+05**
Prob(Ki-kare)	**0.0000**

In Table 6, there is H0 hypothesis established with $\sigma_i^2 = \sigma^2$ equation, X^2 value with 89 degrees of freedom and probability value. According to the test findings, the hypothesis H_0 is rejected and thus it is assumed that the heteroskedasticity exists.

Autocorrelation is an important problem in panel data analysis as well as cross-sectional and time series analysis. Before proceeding with panel regression analysis, the data set should be tested for autocorrelation. Autocorrelation in a series disrupts the regression assumption $e_i = e_{i-1}$. Therefore, the problem of autocorrelation needs to be solved (Kamacı & Konya, 2016: 149).

Another assumption of the fixed effects model is testing presence of autocorrelation. For this purpose, Durbin- Watson, Baltagi- Wu and Pesaran tests were used to test the presence of autocorrelation in the fixed effects model. The findings of this test are given in table 7.

Table 7: Durbin - Watson, Baltagi-Wu and Pesaran tests

Durbin Watson	**1.6668813**
Baltagi Wu LBI	**1.9643151**
Pesaran′s test	**22.951, Pr = 0.0000**

If the value of Durbin - Watson and Baltagi - Wu test statistics is less than 2, it is commented that autocorrelation is important (Tatoğlu, 2016: 226). Looking at the findings in Table 7 for autocorrelation, it is find out that the basic hypothesis that there is no autocorrelation is rejected. Therefore, it is concluded that autocorrelation exists. According to the results of the Pesaran test, the H_0 hypothesis was rejected, inter-unit correlation was found.

When the findings of the assumptions are examined, it was seen that there were different variances (heteroscedacity) and autocorrelation.Therefore, in the presence of both assumptions, Arellano, Foot and Rogers Estimator are used. Table 8 shows the fixed effects regression.

Table 8: Fixed effects GLS regression

BTM	**Katsayı**	**Standart Hata**	**z**	**P**
T1	-.0119928	0830884	-0.14	0.886
T2	**-.0188088**	.0102207	-1.84	0.069**
T3	**-.0004952**	.0000719	-6.89	0.000*
T4	-.0444169	.0426047	-1.04	0.300
T5	.0723274	.0742764	0.97	0.333
T6	-.0146661	.0158081	-0.93	0.356
T7	-1.09e-06	1.10e-06	-0.99	0.325
T8	**3.781542**	1.014571	3.73	0.000*
T9	**-2.077119**	.0757964	-27.40	0.000*
C	1.981218	.374665	5.29	0.000
	Number of obs: 534	Number of groups: 89		Period: 2013-2018
	R-sq:= 0.8143	F(9,88) = 3546.95		Prob > chi2 = 0.0000

*% 1 expresses significance at significance level
** % 10 expresses significance at significance level

As a result of the analysis, return on equity (T9), receivables turnover (T3) and return on assets (T8) were found to be significant at 1% significance level. On the other hand, the liquidity ratio (2) was found to be significant on the stock market performance of manufacturing enterprises.According to the results, while liquidity ratio, receivables turnover and return on equity have negative effects on stock market performance, asset profitability has a positive effect.

When the significant variables are analyzed in order, firstly, it is seen that 1% change in liquidity ratio can change stock market performance by -.018. Although the second variable receivable turnover rate was significant, it was found that it was not strong enough to affect stock

market performance. Finally, 1% change in return on assets and return on equity may affect stock performance at .3.78 and -2.07 respectively.

When other findings are examined in Table 8, it is concluded that current ratio, asset turnover, stocks turnover, short term liabilities / long term liabilities, profit before interest and tax / interest expense (T1, T4, T5, T6, T7) variables do not affect the stock market performance.

5. Conclusion

In study, the determination of financial ratios that are significant on the stock market performance of manufacturing firms has been studied. For this purpose, 89 manufacturing companies were included in the analysis. Panel analysis and annual data for 2013-2018 are used. On the other hand, BTM was taken as dependent variable. Liquidity and current ratios, receivable turnover, asset turnover, stock turnover, short-term debts / long-term debts, interest and pre-tax profit / interest expense, asset return rate and return on equity were included as independent variables.

According to the findings, liquidity ratio, receivables turnover, return on assets and return on equity (T2, T3, T8, T9) independent variables were significant and current ratio, stocks turnover, asset turnover, short term liabilities / long term liabilities, profit before interest and tax / interest expense (T1, T4, T5, T6, T7) independent variables were meaningless on stock market performance. While 3 of the significant variables affect the stock market performance negatively, 1 variable affects the stock market performance positively.

In the analysis, it was determined that liquidity ratio, credit turnover rate, active profitability and equity profitability are significant on stock market performance. When these rates are examined in the literature, it is seen that they have different results besides similar results. Kurtaran et al. (2015) found the liquidity ratio significant, while the opposite Demireli, Basci & Karaca (2014) found it insignificant. Savar (2012) found that the receivable turnover rate is significant. However; Demireli, Basci & Karaca (2014), on the other hand, proved to be insignificant. When the return on assets in the literature is analyzed; Buse & Stefan (2014), Kurtaran et al. (2015) and Özcalık & Aytekin (2017) showed that they are significant on stock market performance. When the return on equity is examined; Robu, Jaba, Mironiuc & Robu (2014), Sharif, Purohit & Pillai (2015) and Ünaldı (2018) found significant on stock market performance. However; Anwaar (2016) and Özçalık & Aytekin (2017) have revealed that they are be insignificant on stock market performance.

As it can be seen from the results of the analysis, it can be said that the earnings expected by the investors are affected by the changes in the return on assets and equity. According to the findings, it is quite fair to reach the conclusion that investors who invest in stocks by taking these two ratios into consideration can provide a higher return than normal rate.

Finally, researchers will be able to use different dependent variables representing stock market performance. They can also use macroeconomic variables and some non-financial variables in addition to financial ratios used as independent variable.

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