Determining the Firm Specific Factors Affecting the Capital Increase*

İsmail Tuna[a]   **Süleyman Serdar Karaca[b]**

Abstract: *The firms increase their capital on three ways; external sources (right), internal sources (bonus) and the use of both external and internal sources (right and bonus).The decision of capital increase causes "anomalies" referred as the state of alienation from the normality in capital markets. The aim of the study is to submit an emprical study about industrial corporations which exist within Borsa Istanbul (BIST) Industrial Index in order to determine the firm specific factors causing anomalies and affecting capital increase decisions. By using the financial ratios belonging to 126 firms that take part in industrial index between the years 2003-2013, three models have been established with 14 dependent variables and 3 qualitative dependent variables (no capital increase-capital increase through rights issues is present-capital increase through bonus issues is present, no capital increase-capital increase is present). These three built models have been tested through the panel logit method in binary choice model way. According to the analysis results, odds ratio has been used to construe the effect size. As a result of the study, it was determined that Paid Capital/Equity and Fixed Assets/Total Assets variables have a positive effect on capital increase decision and its procedure in all three models.*

Keywords: Capital Increase, Right Issue, Bonus Issue, Panel Data Analysis

JEL Classification: G11, G17, G32, C23, C58

1. Introduction

The question of whether the firms will meet their financial needs through loan or through shareholders equity is gaining more and more importance because it affects capital structure, capital cost and firm value. When a firm management resorts to meet their financial needs arising from the reasons such as to strengthen their capital which has been molten under hyperinflation conditions, to meet the funding need which becomes necessary as a result of the real growth of the corporate actions, to make new investments by shareholders equity, they face with three options. These are the capital increases which are made through internal resources (bonus issue) or through external resources (rights issue) and in which internal and external resources are used together.

In Turkey, in accordance with the regulations, firms can prefer either the Registered Capital System or Principal Capital System. Registered capital system can be defined as firms' registering an equity ceiling by applying to Capital Markets Board (CMB), accordingly, the opportunity given to a board of firm management to make capital increase by the equity ceiling registered without the resolution of the general assembly. As

[a]Assist. Prof., PhD., Gaziosmanpasa University, School of Applied Technology and Business, Department of Banking and Insurance, Tokat, Turkiye, ismail.tuna@gop.edu.tr
[b]Assoc. Prof., PhD., Gaziosmanpaşa University, Faculty of Economics and Administrative Sciences, Department of Business Administration, Tokat, Turkiye, suleymanserdar.karaca@gop.edu.tr

for principal capital system, it is a process without an equity ceiling and full of bureaucratic obstacles requiring resolution of general assembly for any capital increase.

New Turkish Commercial Law which went into effect in June 2012 and later on, quite a few regulations related to capital increase were made in the Capital Market Board Law, as well. When the equities whose shares are traded on the stock exchange take a capital increase decision, they have to announce this by Public Disclosure Platform (PDP). On the days before and after the notice, "anomalies", which can be identified as the case of deviation from the normal one due to the sudden fluctuation in trading volume and costs, occur. The anomalies can be sorted as low-priced stock anomalies, price/profit ratio anomaly, weekend anomaly, anomaly of January and absolute contrast anomaly.

It is possible to cluster the hypotheses explaining the effect of the capital increases on share prices in three groups. These are Neutral Price Effect, Positive Price Effect and Negative Price Effect. While academic studies mostly focus on the effect of the capital increase on share prices, the factors peculiar to a firm which affect capital increase have been neglected so far.

The practice which have been carried out through panel logit method on the firms in Borsa Istanbul (Istanbul Stock Exchange) industrial index and its results have been mentioned to make contribution to the process of individual and institutional investors' creating a portfolio by determining the firm specific factors affecting capital increase decisions.

2. Literature

In Suner's study (1995) which was carried out by using 55 capital increases done between the years 1989-1994 by 36 firms which are traded in Istanbul Stock Exchange (ISE) as a base, as a result of the analysis which was obtained by classifying the forementioned firms according to their capital increase size and their general public credit in the market, it was revealed that the capital increases done by the firms "highly" regarded have definitely positive effect on share prices and also the capital increases done by the firms "less" regarded have dramatically negative effect.

Eren (2001) analyzed the long-termed bill performance of the firms performing periodic issue of shares in ISE. In this study, the firms' long-termed bill performances after 663 capital increases in ISE between the years 1991 and 1996 was studied emprically. As a general consequence, it was dertermined that the long-termed share price performance after the capital increases in ISE showed parallelism with the findings of the long-termed low share price after the capital increases principally in the United States of America (USA) and in other countries.

Adaoğlu (2002) tested the effects of capital increases on share prices in ISE. He examined the market's reaction to the notice concerning the permission for capital increase through rights issue and bonus issue as well as permission to use stock rights within the scope of the hypotheses of signalling, export price irrelevance and advanced liquidity (advanced investor basis). In the sample, 65 rights issues and 22 both rights and bonus issues supply notices between the years 1994-1999 were studied. The results showed that in the notice period, the market reacted negatively to the rights issue and reacted positively to the both rights and bonus issues.

Between the years 1998-2000, Kılıç (2002) studied on a sample consisted of the 25 capital increases through bonus issues and 41 bonus and rights issues belonging to 55 firms listing on ISE. The data belonging to the nonfinancial firms, whose price and proceeds information for totally 120-day period -110 workdays before and 10 workdays after the date of the notice- (board of management, application and supply) were obtained, were tested by CAPM (Capital Asset Pricing Model). As a result, it was determined that the notice of bonus issue supply in ISE can get positive excessive proceeds around and bonus issue anomaly is current.

As for another study carried out by Batchelor and Orakçıoğlu (2003) on the data of ISE concerning period 1990-1994, it was concluded that the investors regarded bonus issues as cash dividend and the firm share prices went up after the bonus issue notices. On the other hand, according to the results of the analysis done on the firms in ISE between the years of 1992-2004 by Barak (2006), the rights issue announcements

don't have any positive or negative effects on the share price movements. In this study, it was also seen that the bonus issue announcements between the years of 1992-2004 have a positive effect on the share prices.

Çukur and Eryiğit (2007) analyzed the bonus issues and the composite capital increases in the investment trusts sector between the years of 2000-2005 by the case study method. A two-stage analysis as the announcement and the implementation (-10, +10 days) of the capital increase decisions was done. In the firm-based analyses, positive and/or negative abnormal returns were determined in 7 out of 22 cases at the announcement stage and in 16 out of 22 at the implementation stage. In addition, they concluded that the market is also sensitive to share distribution rate (over/below 100%).

Eriş (2009) researched whether the capital increase notices belonging to the firms whose shares were traded in ISE and which did capital increase between the years 2003-2007 were effective on share prices or not. Within this framework, capital increase decisions were studied by being seperated into two groups, rights and bonus issue decisions. In the analysis concerning to the capital increases through rights issue in which stock rights were used, it was found that positive return can be obtained on the trading days (-1, -3) and (-1, -2) before the capital increase notice. On the days (0, 4), (0,1) and (1, 3) after the capital increase notice and in the trading period, the proceeds of the shares go down below the return of index. The results of the analysis show that the notices of the capital increase through bonus issue made by using the internal resources don't have a notable effect on the perception of the investors.

Cun (2010) seperated 884 capital increases through rights issue which were traded in ISE between the years 1986-2007 and were non-financial into two groups: the one that permitted to use stock rights and the other one that didn't. His study in which he examined the effects of the capital increase through rights issue on the share earnings by using the BHARs and CARs method to measure the profits of the long-termed shares points out that the firms that made capital increases were more exposed to negative market performances in comparison to the ones that didn't make it. Nevertheless, he stated that it wouldn't be right to perceive the negative market performance of the firms making a capital increase as a signal of over valuation due to the lower price performance of the other firms which didn't resort to capital increase in the same term.

The studies done by Grinblatt, Masulis ve Titman (1984) point out that the bonus issue announcements in which profit is added to capital have a positive effect on the share prices. Lamourex and Poon (1987) did a research based on that the bonus share notices affects the events after the notice. Lamourex and Poon tested the hypothesis of that the number of the trade/transaction of the forementioned share and the trading volume of the shares would go up (go down) after the notice of the stock split (reverse split) in the market. In the study that they did on the sample consisted of the shares in the period from June 1962 to December 1985, the share of earnings, the daily trading volume and common information supported this theory.

In Eckbo, Masulis and Norli's study (2000) which contained the period of both 1963-1979 and 1979-1995 concerning the firms that were in NYSE, Amex or Nasdaq indexes in the USA, it was found that the leverage drops by the capital increase through rights issues, the expectation of return decreased owing to the decrease of hypothetical risks, so the shares' prices went down after the notice of the capital increase through rights issues. In this study, it was put forward that even the increase of the liqudity in the wake of the capital increase through rights issues wouldn't create a positive effect on the return expectation.

According to the results of the study (2003) by D'Mello, Tawatnuntachai and Yaman, the notices of the capital increases through bonus issue provided an increase in the prices of the shares due to the decrease of asymmetric information. In their study on the firms within NYSE, Amex or Nasdaq indexes spanning the years of 1983-1992, Krishnamurthy and the others (2005) determined that the stock rights of the firms which were in a financially difficult situation were restricted, and that the capital increase announcements inflated the share prices in the short term.

Chen, Nyugen ve Singal (2011) assessed the share splits within the scope of the information (signal) hypothesis and of the marketability through the regression analysis. They suggested that both approaches include information about both the share performance in the future and the firm performance. They stated that the shares in which the institutional interest increased showed better performance than the other ones after the split and the splits in which the institutional interest increased slightly didn't display any expectant positive abnormal share earning performance or any expectant positive earning performance.

Malhotra, Thenmozhi, Gopalaswamy (2013) studied on the factors affecting the abnormal returns in the process of the announcemet of the bonus and rights stock issues. In this study, the effects of the factors which affected the cumulative abnormal returns were examined in two periods: the first one was the days just before and after the notice and the second one was 20 days before and after the notice. Malhotra and his friends, at the end of their study, stated that market conditions and the industry type had an effect on abnormal returns and bonus issue ratios had no signifcant effects on the returns. On the rights issue notices, the result reached was that the size of the issue and the market conditions have a significant effect on the returns. The size of the firm, the operatin leverage, debt/equity ratio and share earnings volatility were determined as the factors relating to the other firm which have a significant effect on the share earnings during the bonus issue notice. As for the rights issue, it was found that the factor relating to the firm that has a positive and significant effect on the earnings is only the size of the firm.

3. Research Objective and Data Set

A good number of studies researching the effects of the capital increases on the share prices in short and long term have done so far. However, there is not a study in regard to the determination of the firm specific factors affecting the pattern and the amount of the capital increases. The objective of the study is to determine the firm specific factors affecting the capital increase decisions. That there is not a study within this context and that the findings obtained by the study will be able to make a contribution to the process of the firms' creating a portfolio enhance the importance of the study.

Table 1. Table Of The Variables Used

Independent Variables	X1	CR	Liquid Assets+Stocks and Shares/Short Term Liabilities
	X2	PER	Market Value/Net Profit
	X3	M/B	Market Value/Book Value
	X4	SCP	End of Period Share Closing Price
	X5	FA/TA	Fixed Assets/Total Assets
	X6	TD/TA	Total Debt/Total Assets
	X7	EBIT/TA	Earnings Before Interest and Tax/Total Assets
	X8	(EBIT+D)/TA	Earnings Before Interest and Tax+Depreciation/Total Assets
	X9	PC/E	Paid Capital/Equity
	X10	STL/E	Short Term Liabilities/Equity
	X11	LTL/E	Long Term Liabilities/Equity
	X12	TD/E	Total Debt/Equity
	X13	OP/S	Operating Profit/Sales
	X14	PBEIT/S	Profit Before Extraordinary Items and Tax/Sales
Dependent Variables	Y1	CI_1	0-No capital increase, 1- there is capital increase through rights issue
	Y2	CI_2	0- No capital increase, 1- there is capital increase through bonus issue
	Y3	CI_3	0 -No capital increase, 1- there is capital increase

The financial ratios belonging to 126 firms which were continually situated in Borsa Istanbul Industrial Index between the years 2003-2013 in order to escape from the effect of the finacial crisis between the years 2001-2002 and fully declared the financial reports and the year-end closing share prices of these firms compose the data set of the research. The data used in the analysis were taken annually with the year-end closing values. The data were obtained as a secondary source via www.borsaistanbul.gov.tr , www.kap.gov.tr and www.finnet.com.tr .

In the study, 14 firm specific independent and 3 qualitative dependent variables were used. On the Table 1 below, the abbrevations of the variables used in the analysis have been presented with the methods of being calculated.

4. The Method of the Research

In the study, Panel Logit method was made use because of the data set composed of the qualitative dependent variables to determine the firm specific factors affecting the capital increase of 126 firms in Borsa Istanbul Industrial Index in the 11-year period between the years 2003-2013.

Stata12 programme was used to perform the analysis. Three types of data can be mentioned in econometric studies: Time Series, Cross Section Data, Panel Data. Panel Data method can be identified as to bring the observations of individuals, households etc. cross section together in a particular time period. (Tatoğlu, 2012a:2). Panel data gives an opportunity to study by both types of data in the situation in which it is not enough to study by only time series or only cross-section data is not enough. In this respect, panel data means combining the cross-section observations during a particular time period. (Baltagi, 2005:1). Panel data are classified as balanced and unbalanced.

Balanced panel data can be explained as the case of panel data set's containing equally long time series for each cross section and unbalanced panel can be explained as the case of time series lengths' showing difference in each cross section (Tatoğlu, 2012a:2). When it is considered from this aspect, the data set of the research is regarded as balanced panel. In econometric model analysis, not only are the quantitative variables such as income which can be expressed by numbers, price, cost, but also quantitative variables such as gender, state of education, marital status can be incorporated in the model and used. If a qualitative dependent variable takes two values, such as present-absent, positive-negative, yes-no, such models are called "binary choice" . (Demirhan, 2009: 95). In binary choice models, linear probability model, probit model and logit model exist.

Because, in the models with qualitative variables, using linear model may not give correct results to explain the relations among the variables, it is necessary to study by the non-linear models. Logit model, by the way of a non-linear function, identifies any individual's probability of choosing one of the dependent variable options as based on the cumulative logistic probability function (Ün, 2006: 21). Hence, using panel logit method in the study was decided.

4.1. Descriptive Statistics

At the beginning of the analysis, the descriptive statistics of 1389 observations composed of the 11-year data of 126 firms have been considered and the Table 2 below have been prepared to use when construing the models.

Table 2. Descriptive Statistics of the Variables Used

Variable	Number of the observation	Average	Standard Deviation	MIN	MAX
CR	1386	59,71280	1,325169	0	14,97
PER	1386	32,74364	173,7683	0	3665,4
M/B	1386	1,757468	3,063207	0	64,77
SCP	1386	21,56561	114,3583	0,18	2495
FA/TA	1386	49,89797	17,94295	4,98	98,71
TD/TA	1386	43,05161	24,70098	2	293,98
EBIT/TA	1386	5,716342	12,86983	-279,82	59,45
(EBIT+D)/TA	1386	10,53732	27,96639	-276,28	908,19
PC/E	1386	49,41891	69,22771	-521,06	1304,52
STL/E	1386	82,05159	160,7534	-1035,21	3085,12
LTL/E	1386	26,94306	96,02860	-1877,46	1810,91
TD/E	1386	108,9948	235,1273	-2912,67	3888,92
ROP/S	1386	4,057258	30,06762	-532,42	56,76
OP/S	1386	7,171436	97,46895	-769,85	3245,42

*The average values of the variable except for PER, M/B and SCP variables are given in percentages.

Table 3. Average Values of the Variables According to The Capital Increase Pattern

Variables	The Capital Increase Pattern			
	Absent	Rights	Bonus	Existent
CR	59,74	45,12	66,23	56,65
PER	32,73	16,37	81,83	49,10
M/B	1,74	2,14	2,05	2,10
SCP	22,60	9,96	15,67	12,82
FA/TA	49,51	62,72	54,49	58,61
TD/TA	43,26	46,06	37,32	41,69
EBIT/TA	5,69	2,27	5,95	4,11
(EBIT+D)/TA	10,59	5,57	10,56	8,07
PC/E	48,48	91,99	40,88	66,44
STL/E	82,61	93,30	55,5	74,40
LTL/E	26,35	54,3	22,66	38,48
TD/E	108,96	147,60	78,16	112,88
OP/S	3,97	-1,7	5,59	1,95
PBEIT/S	7,28	-5,58	6,69	0,56

*The average values of the variables except for PER, M/B and SCP are given in percentages.

Before setting up Panel Logit Model for the variables, the correlation coefficient between the variables were examined and the relation between the variables was searched. When the correlation coefficients are analyzed, the first value which stands out is the height of the correlation coefficient between TD/E and STL/E. As this high correlation coefficient at 0,95 level will cause the multicollinearity problem, one of these two models will be eliminated at setting up a model stage. In the study, three models were built to determine the firm specific factors affecting the capital increase (CI) decision.

Table 4. Values of the Correlation Coefficient Among The Variables Used

	CR	PER	M/B	SCP	FA/TA	TD/TA	EBIT/TA	(EBIT+D)/ TA	PC/E	STL/E	LTL/E	TD/E	OP/S	PBEIT/S
CR	1													
PER	-0,0251	1												
M/B	0,0401	0,1072	1											
SCP	0,1155	0,043	0,1946	1										
FA/TA	0,0205	-0,0126	-0,0971	-0,0081	1									
TD/TA	-0,4188	0,0267	0,1148	-0,1041	-0,2156	1								
EBIT/TA	0,2754	-0,0381	0,0037	0,0915	-0,0911	-0,4333	1							
(EBIT+D)/TA	0,1154	-0,0248	0,0008	0,0456	0,0117	-0,2123	0,4664	1						
PC/E	-0,0721	0,0264	0,1802	-0,1013	-0,0128	0,1269	-0,1852	-0,1003	1					
STL/E	-0,1599	0,0172	0,5154	-0,0322	-0,179	0,3654	-0,1523	-0,0739	0,465	1				
LTL/E	-0,0721	0,0064	0,2316	-0,0358	0,0376	0,1298	-0,1068	-0,0526	0,5116	0,655	1			
TD/E	-0,1388	0,0144	0,4469	-0,0367	-0,1071	0,3028	-0,1478	-0,072	0,5269	0,9512	0,8562	1		
OP/S	0,0444	-0,0181	-0,0434	0,0317	-0,0981	-0,0676	0,2552	0,1292	-0,1548	-0,0382	-0,0138	-0,0318	1	
PBEIT/S	0,3139	-0,0043	-0,0033	0,0103	0,0228	-0,1153	0,1953	0,0876	-0,075	-0,0349	-0,0182	-0,0313	0,0307	1

Here are they:

CI_1=0 There is no capital increase, 1 there is a capital increase through rights issue

CI_2=0 There is no capital increase, 1 there is a capital increase through bonus issue

CI_3=0 There is no capital increase, 1 there is a capital increase

In terms of these models built, the tables belonging to the dependent variables occuring in the consequence of 1386 observations pertaining to the 11-year data of 126 firms.

Table 5. The Frequency Table of the Dependent Variables

variable: CI_1 0- absent, 1-rights			variable: CI_2 0- absent,1-bonus issue			variable: CI_3 0- absent, 1 existent		
	Frequency	Percentage		Frequency	Percentage		Frequency	Percentage
0	1357	98,2	0	1309	94,44	0	1,280	92.35
1	29	2,09	1	77	5,56	1	106	7.65
Total	1386	100	Total	1386	100	Total	1,386	100

As it is understood from the tables, while the number of the capital increases through rights issue was 29 and at 2,09% level and the number of the capital increase through bonus issues was 77 and at 5,56% level, the number of the capital increase occured 106 and at 7,65% level when they were considered in terms of the total capital increase through rights and bonus issues.

The capital increase decisions of the firms remains rather low when the number of the observation is considered.

4.2. The Analysis of the Steady States

As in all time series analysis, the variables need to be stable in order not to cause fake relations between the variables in panel data analysis in which both time and cross section analysis are carried out together. Stability is searched by unit root tests. Panel unit root tests are seperated in two groups. The first

generation tests assume that there is not a correlation among the units. If there is, the power of these tests are weak. The key feature of the second panel unit root tests is that there is a correlation among the series belonging to the units (Tatoğlu, 2012b:199)

"The most widely used First Generation Unit Root Tests are Levin, Lin and Chu (2002) Breitung (2000) Im, Pesaran and Shin (2003) Fisher ADF (Maddala and Wu,1999) Fisher Philips and Perron (Choi,2001) Hadri (2000). As for the Second Generation Unit Root Tests, they are determined as Bai and Ng (2004) Moon and Perron (2004) Philips and Sul (2003) Pesaran (2004) Choi (2002) Chang (2002,2004)" (Korkmaz ve Karaca, 2013:174).

The stagnations of the series used were analyzed through Fisher Type of Unit Root Test. This test is used when T goes ahead endlessly and N is stable. In the study, N number is 126 and the year number is 11. If this test is used in the case when N goes ahead endlessly, it must increase evenly with the unit N number that doesn't include a unit root.

In this test, the hypotheses are as can be seen below.

H_0: All variables include unit roots.

H_1: At least one variable is stable.

As can be seen in the table below, for M/B and STL/E series, the null hypothesis wasn't rejected in ADF test done in the model with trend and in Inverse Normal Test statistics and the null hypothesis, for STL/E, was rejected at 5% significance level in Perron type test.

For TD/E variable, the null hypotehesis was rejected 5% in ADF type test Inverse Normal test statistics. Except for these variables, in all rest series, the null hypotehesis which pointed out that the series was stable was rejected 1%. It was inferred that all series used were stable and the level values of the series needed to be used in the models applied.

Table 6. Unit Root Tests

Variable	CR	PER	M/B	SCP	FA/TA	TD/TA	EBIT/TA
Fisher- ADF							
Model with drift							
Inverse χ^2	492,3855***	487,5706***	432,5722***	496,0158***	482,0624***	439,7553***	487,6782***
Inverse normal	-10,1843***	-10,0082***	-8,8157***	-9,9585***	-9,4115***	-8,4672***	-10,6157***
Inverse logit	-9,7922***	-9,7717***	-8,4663***	-9,9204***	-9,3616***	-8,2091***	-10,1876***
Modified inv. χ^2	10,7076***	10,757***	8,2875***	10,8693***	10,2478***	8,3633***	10,4979***
Model with Trend							
Inverse χ^2	1797,1735	855,7171***	726,737***	871,321***	1542,7858***	819,3001***	1557,0992***
Inverse normal	-14,6918***	-14,0423***	1,8039	-1,7848**	-8,0561***	0,1613	-8,8687***
Inverse logit	-37,5345***	-18,3171***	-5,5895***	-10,0982***	-26,9912***	-8,4081***	-27,6495***
Modified inv. χ^2	68,8275***	26,8917***	21,1465***	27,5867***	57,4962***	25,2696***	58,1337***
		Fisher-Perron					
Model without drift							
Inverse χ^2	692,5201***	1254,1161***	465,4781***	1041,2919***	413,6334***	390,3724***	856,1879***
Inverse normal	-9,2846 ***	-21,0313***	-7,3381***	-12,8006***	-4,006***	-1,9379***	-14,1225***
Inverse logit	-12,8721 ***	-29,3231***	-7,8016***	-21,8234***	-5,063***	-3,3173***	-18,5215***
Modified inv. χ^2	19,6223***	44,6378***	9,5091***	35,1579***	7,1997***	6,1636***	26,9127***
Model with drift							
Inverse χ^2	633,4586***	1153,5472***	492,7162***	1021,7758***	536,6425***	575,9625***	966,0868***
Inverse normal	-5,0444***	-18,7376***	-4,0929***	-9,8666***	-2,7167***	-3,1645***	-12,7566***
Inverse logit	-9,3312 ***	-26,7388***	-6,4498***	-19,9071***	-6,6167***	-6,9004***	-19,2388***
Modified inv. χ^2	16,9915 ***	40,1581***	10,7224***	34,2885***	12,679***	14,4304***	31,808***
Variable	EBIT/TA	PC/E	STL/E	LTL/E	TD/E	OP/S	PBEIT/S
Fisher- ADF							
Model with drift							
Inverse χ^2	466,455***	517,7118***	409,2055***	456,3937***	420,911***	523,4737***	511,4871***
Inverse normal	-9,5292***	-9,6093***	-6,936***	-8,3431***	-7,4033***	-11,4775***	-11,1215***
Inverse logit	-9,2477***	-10,0241***	-6,7402***	-8,1496***	-7,2442***	-11,2215***	-10,817***
Modified inv. χ^2	9,5526***	11,8357***	7,0025***	9,1044***	7,5239***	12,0924***	11,5585***

Model with Trend Inverse χ^2 Inverse normal Inverse logit Modified inv. χ^2	1456,1024*** -6,6532*** -24,5609*** 53,635***	1620,362*** -8,9625*** -29,9954*** 60,9517***	886,6673*** -1,1183 -11,2352*** 28,2703***	1283,7267*** -6,3338*** -21,8402*** 45,9568***	979,4056*** -2,1818** -13,7079*** 32,4012***	1912,7448*** -14,8295*** -38,3032*** 73,9755***	1595,4355*** -11,0944*** -30,4912*** 59,8414***
Fisher-Perron							
Model with drift Inverse χ^2 Inverse normal Inverse logit Modified inv. χ^2	799,1362*** -12,6528*** -16,4569*** 24,3714***	1537,9969*** -19,1516*** -34,1916*** 57,2829***	385,2383*** -1,7554** -2,5454*** 5,9349***	751,4979*** -7,3723*** -13,2015*** 22,2494***	444,6463*** -1,1149*** -3,0646*** 8,5811***	851,2285*** -12,8168*** -17,779*** 26,6918***	827,3507*** -13,874*** -17,6579*** 25,6282***
Model with Trend Inverse χ^2 Inverse normal Inverse logit Modified inv. χ^2	1093,7466*** -15,1043*** -22,9849*** 37,4944***	1797,2502*** -18,4581*** -39,0047*** 68,8309***	659,5174*** -4,5929*** -9,4627*** 18,1523***	842,9781*** -6,162*** -13,6245*** 26,3243***	517,6897*** -2,6325*** -5,673*** 11,8348***	835,1704*** -11,5775*** -16,5937*** 25,9765***	1006,438*** -14,0741*** -21,2259*** 33,6053***

Note: **, *** show the statistical significance respectively in 5% and 1%.The level of lag on all models is taken as 3

4.3. Assumption of Models

In the descriptive statistics section, the attention was drawn to the highth of the correlation coefficient at 0,95 level between TD/E and STL/E and it was stated that one of these two variables would be excluded since this high correlation coefficient would cause multicollinearity problem in the model.

At this stage, STL/E was discarded because TD/E was thought to be a variable more explanatory. Next, principally, Random Effects and Fixed Effects models with 13 variables was built for each dependent variable. These built models were compared through Hausman test and a choice was made between two models. After the right model was chosen, the Fixed Effects and Random Effects Models in which there were significant variables in the extensive model were built.

This test was repeated for the second time to confirm the result of Hausman test in the extensive model. Hausman is a test that provides us to make a choice between Random Effects and Fixed Effects Models (Tatoğlu, 2012a:181)

The hypotheses of the test are:

H_0: The difference in the correlation coefficients is not systematic. Random Effects Model is used.

H_1: The difference in the correlation coefficients is not systematic. Fixed Effects Model is used.

Model 1: 0- there is not a capital increase, 1- there is a capital increase through rights issue.

The outputs of panel logit analysis in which Random and fixed effects models pertaining to binary choice model were tested by using the dependent variables, valuing the case of capital increase as 0 and the case of capital increase through rights issue as 1, are existent in the table.

Before Hausman Test that is used in order to make a choice between Random Effects and Fixed Effects models, Likelihood-ratio is used to make a choice between Random Effects and the ordinary logit model. This test statistics checks over the rho correlation coefficient equility to zero through this formula, u indicates the residual term:

$\text{lnsig}^2 u : \ln(\sigma_u^2) \quad \rightarrow \quad \text{sigma } u = \sigma_u \quad \rightarrow \quad \text{rho} = \sigma_u^2 / (\sigma_u^2 + \sigma_e^2)$

The equality of the correlation coefficient to zero indicates that there is not a change in the residuals between the firms. If the null hypothesis is rejected, it is interpreted that Random Effects Logit Model is preferred to the ordinary logit model(Tatoğlu, 2012a:168).

Table 7. Extensive Model I – Dependent Variable (CI$_1$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
PBEIT/S	-0,00073	0,0036	0,037539	0,03351
OP/S	-0,00017	0,007809	-0,06087	0,047654
TD/E	-0,00303	0,003014	-0,00663	0,006024
LTL/E	0,002253	0,005078	-0,00057	0,006857
PC/E	0,00643*	0,003485	0,008156	0,007266
(EBIT+D)/TA	-0,07541	0,112968	-0,24115	0,149786
EBIT/TA	0,101104	0,115858	0,273804*	0,149689
TD/TA	0,013146	0,014539	0,006322	0,045093
FA/TA	0,060531***	0,021482	0,114846**	0,046125
SCP	-0,00728	0,014992	-0,02797	0,045628
M/B	0,141774	0,097446	0,510164	0,361512
PER	-0,00187	0,005816	-0,0015	0,008083
CR	0,06839	0,233679	1,296668*	0,759421
constant	-9,83192	2,003154		
lnsig^{2}u	1,449778	0,60334		
sigma_u	2,064501	0,622798		
rho	0,564373	0,148335		
Wald Chi-square(13)		13,70	LR Chi-square(13)	24,94**
Log likelihood		-103,81778	Log likelihood	-37.144339
Likelihood-ratio test		16,78***		
Hausman Test: Chi-square(13) 8,50				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%.

Table 8. Narrowed Model I – Dependent Variable (CI$_1$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
PC/E	0,004329**	0,002129	0,006537	0,005142
FA/TA	0,0559032***	0,019455	0,070739**	0,032467
constant	-8,997625***	1,55046		
lnsig2u	0,246622	2,398119		
sigma_u	1,131236	3,316997		
rho	0,280048	0,769816		
Wald Chi-square(13)		11,62***	LR Chi-square(13)	8,37**
Log likelihood		-106,39307	Log likelihood	-45,431035
Likelihood-ratio test		17,86***		
Hausman Test: Chi-square(13) 0,62				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%.

As can be seen, the null hypothesis wasn't rejected as a result of Hausman Test. The model to be used is Random Effects model. In Random Effects Model, it has been seen that PC/E variable was 5%, FA/TA variable was 1% significant. In Table 8, the model built through these two variables is seen. Before interpreting Table 8, it was examined whether Hausman Test results were consistent with the previous extensive model. As can be seen, the null hypothesis cannot be rejected again.

Random Effects Model is to be used. According to Wald Test results, Random Effects Model is seen 1% significant. When the correlation coefficients were analyzed, it was determined that the varible of PC/E

was at 5% significance level and FA/TA was at 1% significance level. According to the findings obtained, there are two variables affecting the capital increase though rights issue of the firms. These are the variables of Paid Capital/Equity and Fixed Assets/Total Assets. The effect of these both variables was found positive, that is, the increase in both variables boosts the likelihood of the firm's making a capital increase through rights issue.

The interpretation of the correlation coefficients in panel logit model is rather similar to the one in logistic regression model. The correlation coeffients are interpreted in the way that they are to determine the direction of their effects, but the correlation coeffients don't give the size of the effect.

Odds ratio is used to interpret the size of the effect. The variables whose odds ratio is approximately 1 are the variables which don't contribute to the change of Y. When analyzing the odds ratio, the significance of the correlation coefficient is primarily to be considered. When the significance is provided statistically, the value of the odds ratio greater than 1 point out that the related variable is a substantial factor.

As for the values of the odds ratio that are approximately 0, on condition that the correlation coefficient is significant, it can be said that the variable is a substantial factor, but it causes Y to take low values and it provides a negative value (Özdamar, 1999:487).

In Table 9, the odds ratios obtained from Random Effects Model are presented. That the odds ratios of the PC/E and FA/TA variables is greater than 1 and statistically significant when the other variables are kept stable indicates each of these variables is a significant factor. Of these variables, the one which boosts the likelihood of a firm's making a capital increase in response to one unit change is FA/TA variable.

Table 9. Odds Ratios I – Dependent Variable (CI$_1$)

	Random Effects Model	
	Odds Ratio	**Standard Error**
PC/E	1,004338**	0,002138
FA/TA	1,057495***	0,020574
Constant	0,000124***	0,000192
Insig^{2}u	1,322371	0,548861
sigma_u	1,937087	0,531596
rho	0,532834	0,136624
Wald Chi-square(13)	11,62***	
Log likelihood	-106,39307	
Likelihood-ratio test	17.86***	

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%.

Model 2: 0 there is no capital increase, 1 there is a capital increase through bonus issue.

The outputs of the panel logit analysis by which Random and fixed effects models belonging to the binary choice were tested by using "0" for the case of no capital increase and 1 qualitative variable for the case of the capital increase through bonus issue are given on the table below. When Table 10 was checked, it was determined that the null hypothesis of Hausman Test was rejected and the fixed effects model was admissable.

When the correlation coefficients are checked, it is seen that TD/E, PC/E, (EBIT+D)/TA, EBIT/TA, SCP and CR variables are at 5% significance level, FA/TA variable is at 1% significance level and M/B variable is at 10% significance level. Also, the model is significant in 1%. A narrowed model is to be built through the variables of Fixed Effects Model which was found significant in the extensive model. Likelihood ratio test statistics examine the equality of the calculated rho correlation coefficient to zero. If the null hypothesis is rejected, Random Effects Logit Model is interpreted to be preferred to an ordinary logit model. As can be seen, the null hypothesis was rejected, that is, Rasal Effects Model is to be preferred to an ordinary

Table 10. Extensive Model II – Dependent Variable (CI$_2$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
PBEIT/S	-0,00061	0,005173	-0,01317	0,038463
OP/S	0,004747	0,009142	0,017944	0,049075
TD/E	-0,00379	0,002842	-0,0146**	0,006131
LTL/E	0,004404	0,00483	0,000602	0,009003
PC/E	0,003248	0,00313	0,01323**	0,005459
(EBIT+D)/TA	0,000748	0,005316	0,177752**	0,074174
EBIT/TA	-0,00265	0,018933	-0,17784**	0,085675
TD/TA	-0,01557	0,010812	0,044115	0,028681
FA/TA	0,015206	0,011785	0,059334***	0,022687
SCP	-0,00682	0,006601	-0,03257**	0,015367
M/B	0,082451	0,071359	0,18917*	0,110719
PER	0,000381	0,000721	0,000636	0,000928
CR	-0,04886	0,146023	0,515957**	0,262729
Constant	-3,84742***	0,96679		
lnsig²u	0,8770571	0,3860305		
sigma_u	1,550424	0,2992555		
rho	0,4221898	0,0941704		
Wald Chi-square(13)		11,07	LR Chi-square(13)	38,79 ***
Log likelihood		-271,05854	Log likelihood	-125,62005
Likelihood-ratio test		35,49***		
Hausman Test Chi-square(13): 22,60**				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%.

When Table 11 was checked, the preference of Fixed Effects Model was confirmed again. When the correlation coefficients were checked, it was determined that PC/E, (EBIT+D)/TA, EBIT/TA, FA/TA and SCP variables were significant in 5% and TD/E variable was significant in 1%. M/B and CR variables are statistically insignificant. The variables can be said to be ineffective on capital increase variables. As mentioned before, only the direction of the correlation coefficients can be interpreted. In this case, TD/E, EBIT/TA ve SCP variables have an effect decreasing the likelihood of making a capital increase through bonus issue; on the other hand, PC/E, (EBIT+D)/TA ve FA/TA variables have an increasing effect on it.

Table 11. Narrowed Model II – Dependent Variable (CI$_2$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
TD/E	-0,00164*	0,00088	-0,00828***	0,003076
PC/E	0,00306	0,003136	0,01165**	0,004811
(EBIT+D)/TA	0,00076	0,00523	0,153059**	0,069681
EBIT/TA	0,00893	0,017001	-0,15510**	0,072702
FA/TA	0,02255**	0,0113	0,050117**	0,022044
SCP	-0,00517	0,005974	-0,02776**	0,012888
M/B	0,02955	0,055143	0,12174	0,08433
CR	0,03836	0,12847	0,338314	0,227543
Constant	-4,99761***	0,788131		
lnsig²u	0,9525865	0,3830281		
sigma_u	1,610095	0,3083558		
rho	0,4407149	0,0944108		
Wald Chi-square(13)		11,07	LR Chi-square(13)	38,79 ***
Log likelihood		-271,05854	Log likelihood	-125,62005
Likelihood-ratio test		35,49***		
Hausman Test Chi-square(13) :19,83 **				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%

Table 12. Odds Ratios II – Dependent Variable (CI$_2$)

	Fixed Effects Model	
	Odds Ratio	Standard Error
TD/E	1.003074	0.003145
PC/E	0.99836*	0.000879
(EBIT+D)/TA	1.000769	0.005234
EBIT/TA	1.008973	0.017153
FA/TA	1.022806**	0.011558
SCP	0.994848	0.005943
M/B	1.029998	0.056797
CR	1.039107	0.133494
LR Chi-square(13)	35,59***	
Log likelihood	-127,21841	

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%

When the odds ratios were calculated, it was seen that only FA/TA variable was significant (5%) in Table 12. Also, the model was significant, as well. That the effect was greater than 1 and significant indicates that this variable had an important effect on the dependent variable.

Model 3: 0 no capital increase, 1 there is a capital increase.

The outputs of the panel logit analysis by which Random and fixed effects models belonging to the binary choice were tested by using "0" for the case of no capital increase and 1 qualitative variable for the case of the capital increase through bonus issue are given on the table below. The results obtained when the dependent variable is seperated in two as absent-existent are shown on Table 13. Primarily, when Random Effects Model on the first column was checked, the model was determined to be significant as a result of Wald test. As the results of Hausman Test, it was determined that it was right to choose Fixed Effects Model. Fixed Effects Model built is significant in 1% according to the results of the likelihood ratio test.

Table 13. Extensive Model III – Dependent Variable (CI$_3$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
PBEIT/S	-0,00078	0,003918	0,011523	0,023134
OP/S	0,003105	0,007458	-0,02014	0,028473
TD/E	-0,00454**	0,002315	-0,01015**	0,004036
LTL/E	0,004661	0,003921	-0,00141	0,006686
PC/E	0,006362**	0,002716	0,010875**	0,00427
(EBIT+D)/TA	0,000144	0,006415	0,091556	0,067197
EBIT/TA	0,010501	0,017407	-0,06893	0,071417
TD/TA	-0,0065	0,010445	0,035315	0,024151
FA/TA	0,033208***	0,012315	0,075944***	0,020118
SCP	-0,00977	0,007287	-0,02694**	0,012042
M/B	0,101298*	0,061472	0,142607*	0,07465
PER	0,000292	0,000715	0,0005	0,000894
CR	0,042901	0,136648	0,598348***	0,23208
Sabit	-5,32275***	1,007362		
lnsig^{2}u	1,379968	0,349262		
sigma_u	1,993684	0,348159		
rho	0,54714	0,08654		
Wald Chi-square(13)	19,57		LR Chi-square(13)	52,93 ***
Log likelihood	-326,44368		Log likelihood	-156,97726
Likelihood-ratio test	71,70***			
Hausman Test Chi-square(13): 29,84***				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%

When the correlation coefficients were analyzed, TD/E, PC/E, FA/TA, SCP, M/B and CR variables were determined statistically significant. FA/TA and CR variables are in 1%, TD/E, PC/E, SCP variables are in 5% and M/B variable is in 10% statistically significant.

The narroweded model results built through these variables found significant are displayed in Table 14. As it is seen, when the narroweded models in the Fixed Effects Model are analyzed, it is seen that the model is significant in 1%, TD/E and FA/TA variables are at 1% significance level and PC/E, SCP, M/B and CR variables are significant at 5% significance level.

Table 14. Narrowed Model III – Dependent Variable (CI$_3$)

	Random Effects Model		Fixed Effects Model	
	Corr. Coefficient	Standard Error	Corr. Coefficient	Standard Error
TD/E	-0,00228***	0,000869	-0,00717***	0,002129
PC/E	0,006076**	0,002687	0,009475**	0,004164
FA/TA	0,035811***	0,011728	0,069284***	0,019092
SCP	-0,00754	0,006747	-0,0253**	0,011147
M/B	0,057333	0,048706	0,1236**	0,063111
CR	0,116403	0,121858	0,510245**	0,202943
Constant	-5,73069***	0,833206		
lnsig²u	-11,47121	442,9001		
sigma_u	0,0032289	0,7150458		
rho	3,17e-06	0,0014036		
Wald Chi-square(13)		17,53***	**LR Chi-square(13)**	48,30 ***
Log likelihood		-328,64354	**Log likelihood**	-159,29577
Likelihood-ratio test		72,41***		
Hausman Test: Chi-square(13): 17,53 ***				

Note: *, **, *** indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%

Table 15. Odds Ratios III – Dependent Variable (CI$_3$)

	Fixed Effects Model	
	Odds Ratio	Standard Error
TD/E	0,992853***	0,002114
PC/E	1,00952**	0,004204
FA/TA	1,07174***	0,020462
SCP	0,975019**	0,010869
M/B	1,131563**	0,071415
CR	1,6657**	0,338042
LR Chi-square(6)	48,30***	
Log likelihood	-159,29577	

Note: *, **, ***indicate that the null hypothesis was rejected respectively in 10%, 5% and 1%

All variables were seen to be statistically significant when the odds ratios were analyzed for CI$_3$ dependent variable. It was seen that the most effective variable was CR variable and the other effective variables were, respectively, M/B, FA/TA and PC/E. That the effects of TD/E and SCP variables were less than 1 indicates that the variable reduced the likelihood of making a capital increase. Of these variables, it was CR variable that boosted the likelihood of a firm's making a capital increase most, in response to one unit change. Respectively, M/B, FA/TA and PC/E come after this variable.

On the table below, for the three built models to determine the firm specific factors affecting the capital increase, a summary table which displays the variables found statistically significant, the significance level of the variables, which Random-fixed effects models are admissible as well as odds ratios and their effects on the likelihood of making capital increase has been prepared.

Table 16. Models Summary Table

	Significant Variables	Significance Level	Valid Model	Odds Ratio	The Effect on Capital Increase
Model 1 (CI$_1$)	FA/TA	%1	Random Effects	1,05749	+ , **HIGH**
	PC/E	%5		1,00433	+ , **LOW**
Model 2 (CI$_2$)	TD/E	%1	Fixed Effects	1,00307	-- , **LOW**
	PC/E	%5		0,99836	+ , **LOW**
	(EBIT+D)/TA	%5		1,00076	+ , **LOW**
	EBIT/TA	%5		1,00897	-- , **LOW**
	FA/TA	%5		1,02280	+ , **HIGH**
	SCP	%5		0,99484	-- , **LOW**
Model 3 (CI$_3$)	TD/E	%1	Fixed Effects	0,99285	-- , **LOW**
	FA/TA	%1		1,07174	+ , **HIGH**
	PC/E	%5		1,00952	+ , **LOW**
	SCP	%5		0,97501	-- , **LOW**
	M/B	%5		1,13156	+ , **HIGH**
	CR	%5		1,66570	+ , **VERY HIGH**

5. Conclusion

When their correlation coefficients were analyzed, for Model 1 (CI$_1$) in which the factors affecting the capital increase through rights issue were tested and Random Effects Model were admissible, it was determined that PC/E variable was at 5% and FA/TA variable was at 1% significance level. Of them, FA/TA variable is the one which boosts the likelihood of the firm's making the capital increase most in response to one-unit change.

When their correlation coefficients were analyzed, for Model 2 (CI$_2$) in which the factors affecting the capital increase through bonus issue were tested and Random Effects Model were admissible, it was determined that PC/E, (EBIT+D)/TA, EBIT/TA, FA/TA and SCP variables were at 5% and TD/E variable was at 1% significance level. While TD/E, EBIT/TA and SCP variables have a decreasing effect on the capital increase through bonus issue, PC/E, (EBIT+D)/TA and FA/TA variables have a boosting effect. When the odds ratios were calculated, FA/TA variable was seen to be (5%) significant. In addition, it was determined that the ones whose Earnings Before Interest and Tax were high prefer capital increase through bonus issues.

For Model 3 (CI$_3$) in which the factors affecting the capital increase are tested, in the case when the capital increase through rights or bonus issue or through both rights and bonus, it is seen that Fixed Effects Model was effective and when the correlation coefficients are analyzed, TD/E and FA/TA variables were at 1% and PC/E, SCP, M/B and CR variables were at 5% significance level.

When the odds ratios were analyzed, it was seen that all variables were statistically significant. That the effects of TD/E and SCP variables were less than 1 illustrates the variable reduced the likelihood of the capital increase. Of these variables, CR was the one which boosted the likelihood of the capital increase most in response to one-unit change.

As a result of the analyses done through 3 models, it was seen that the variables of Paid Capital / Equity and Fixed Assets / Total Assets were significant in each three models. In Model 2 (the capital increase through bonus issue) and In Model 3 (bonus and rights issues together), Total Debt/Equity and Year-end Closing Share Price variables turned out to be significant. In addition, it was determined that the ones whose Earnings Before Interest and Tax were high prefer capital increase through bonus issues.

According to the results obtained for Mode 1 (SA1), it can be said that firms resort to capital increase through rights issues to strengthen their capital structures and to increase fixed assets when ODSERZK and DURVTA rates are low. When Table 3 is reviewed, it is seen that these rates of the firms increasing capital through rights issues are high.

According to the results obtained for Model 2 (SA2), the possibility of capital increase through bonus issues in the firms in which TBZK rate is below 100%, FVKTA rate is below 5% and in which DSHKF is below 15 TL decreases. In other words, it can be said that the possibility of capital increase through bonus issues of firms of which use of liabilities is low, return on assets is relatively high and of which share prices are over 15TL rises.

According to the results obtained for Model 3 (SA3), the possibility of capital increases through bonus as well as rights issues of the firms of which ODSERZK rate is over 60%, PDDD rate is over 2, DSHKF is over 10 TL and NO is low rises.

The reason why the study doesn't include macroeconomic variables (such as producer price index, interest and foreign trade deficit) stems from that macroeconomic variables take different values for each firm by years, but macro variables have a recurrent structure for each firm by years. Any study concerning the determination of macro and microeconomic factors hasn't been found during the literature review.

Through this study, the effects of microeconomic variables on the firms' capital increase decisions. This study offers an opportunity to make a comparison and to make an interpretation, since any similar study has been found neither in Turkey nor abroad.

Anticipatorily, it is expected that the factors affecting capital increase decisions with regard to both investors and firms are to be seen better by examining the effects of macroeconomic factors on capital increase decisions of firms.

End Notes

References

Adaoğlu, C. (2002). Rights Offerings in a Different Institutional Setting: Evidence from the Istanbul Stock Exchange. *, The Istanbul Stock Exchange (ISE) Finance Award Series*, 3, 29-67.

Baltagi, B. H. (2005). *Econometric Analysis of Panel Data* (3. ed.). Chichester, British Virgin Islands: John Wiley&Sons Inc.

Barak, O. (2006), Hisse Senedi Piyasalarında Anomaliler ve Bunları Açıklamak Üzere Geliştirilen Davranışsal Finans Modelleri - İMKB'de Bir Uygulama, Gazi Ün. Sosyal Bilimler Ens. *Doktora Tezi*, Ankara.

Batchelor, R. & Orakçioğlu, İ. (2003). Event-related GARCH: The Impact Of Stock Dividends In Turkey. *Applied Financial Economics*, 13(4), 295-307.

Chen, H., Nguyen, H.H. & Singal, V. (2011), The Information Content of Stock Splits. *Journal of Banking&Finance,* 35, 2454-2467.

Cun, E. (2010), Stock Price Reactions To Rights Issues: Evidence From The Istanbul Stock Exchange (ISE), Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü, *Yüksek Lisans Tezi*, İzmir.

Çukur, S. ve Eryiğit, R. (2007), Yatirim ortakliklari ve bedelsiz sermaye artırımları: İMKB'de ampirik bir analiz. *İktisat İşletme ve Finans 22 (254)*, 73-85

Demirhan, A. (2009), Bankaların Sektörel Paylarındaki Değişimin Nitel Bağımlı Değişkenli Panel Veri Modeliyle Analizi, İstanbul Üniversitesi Sosyal Bilimler Enst., İşletme ABD, *Doktora Tezi*, İstanbul.

D'Mello, R., Tawatnuntachai, O., & Yaman, D. (2003). Why do Firms Issue Equity After Splitting Stocks?. *The Financial Review*, 38(3), 323-350.

Eckbo, B., Masulis, R. & Norli, Ø. (2000). Seasoned Public Offerings: Resolution of The New Issues Puzzle. *Journal of Financial Economics*, 56(2), 251-291.

Eren, M. (2001), İMKB'de Sermaye Artırımı Yapan Şirketlerin Uzun Dönemli Performanslarının İncelenmesi, Hacettepe Üniversitesi Sosyal Bilimler Enstitüsü, *Yüksek Lisans Tezi*, Ankara.

Eriş, N. (2009), Bedelli ve Bedelsiz Sermaye Artırımlarının Yatırımcı Davranışları Üzerindeki Etkisi: İMKB Şirketleri Üzerinde Ampirik Bir Çalışma, Ankara Ün. Sosyal Bil. Enst, *Yüksek Lisans Tezi*, Ankara

Grinblatt, M., Masulis R.W. & Titman, S. (1984) The Valuation Effects of Stock Splits and Stock Dividends. *Journal of Financial Economics (JFE),* Vol. 13 (4), 461-490

Kılıç, S. (2002), Sermaye Artırımlarının Hisse Senedi Fiyatlarına Etkisi ve Bedelsiz Hisse Senedi Anomalisinin Test Edilmesi: İMKB'de Bir Uygulama, Hacettepe Ün. Sosyal Bil. Enst, *Yüksek L. Tezi*, Ankara.

Korkmaz, Ö. & Karaca, S. S. (2014). Firma Performansını Etkileyen Faktörler ve Türkiye Örneği [The Factors Affecting Firm Performance: The Case of Turkey]. *Ege Akademik Bakış*, 13(2), 169-179.

Krishnamurthy, S. & Diğerleri, (2005), Does Investor Identity Matter in Equity Issues? Evidence from Private Placements. *Journal o f Financial Intermediation,* Vol. 14, 210-238.

Lamourex ,C. & Poon,P.(1987). The Market Reaction to Stock Splits. *Journal of Finance*, 42(5), 1347-1370

Malhotra, M., Thenmozhi, M. & Gopalaswamy , A. K. (2014). Factors Influencing Abnormal Returns Around Bonus and Rights Issue Announcement . *The IUP Journal of Applied Finance*, 19(4), 41.

Özdamar, K. (1999). *Paket Programlarla İstatistiksel Veri Analizi [The Statistical Data Analysis Software Package]* (1. ed.). Eskişehir, Türkiye: Kaan Kitabevi.

Suner, K. (1995), Effect Of Equity Rights Issues on Stock Prices in The Istanbul Stock Exchange, Koç University, *Yüksek Lisans Tezi*, İstanbul.

Tatoğlu , F. (2012a). *Panel Veri Ekonometrisi*, İstanbul, Türkiye: Beta Yayınevi.

Tatoğlu , F. (2012b). *İleri Panel Veri Analizi,* İstanbul, Türkiye: Beta Yayınevi.

Ün, T. (2006), Çok Seçenekli Nitel Bağımlı Değişkenli Panel Veri Modelleri ve Mevduat Bankaları Üzerine Bir Uygulama, Marmara Üniversitesi Sosyal Bil. Ens., Ekonometri Anabilim Dalı, *Doktora Tezi*, İstanbul.

This Page Intentionally Left Blank