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Evaluating the Relationship between Calendar Anomalies and Stock Return of TSE Listed Companies

Mohammadreza Vatanparast
Assistant Professor, Accounting Department, Islamic Azad University, Rasht Branch, Rasht, Iran

Sara Zaynalpour Ahrabi[1]
Master of Accounting, Islamic Azad University, Rasht Branch, Rasht, Iran

Abstract

To expand the financial literature and also in view of the necessity of updating in today's knowledge of the world, this research examines one of the most recent issues of financial management, means science of behavioural finance that is dedicated to the behavioral character of the capital market and the study of the behavioral and psychological aspects of the capital market. In this field, one of the interesting topics is the calendar effects that deal with the anomalies in behavior and performance of market in different times of day, week, month and year. The problem that follows in this study is to investigate the relationship between weekdays, including the categories of periodic or calendar effects, on stock returns, and claims that there are heterogeneous returns on different days of the week, at that time, it would be possible to generate extra returns by formulating strategies for these daily patterns. To achieve this goal, five hypotheses have been formulated and 160 companies were selected from listed companies in the Tehran Stock Exchange for a period of 5 years, 2012 to 2016. The method of this research is applied and descriptive-correlational. To test the hypotheses, linear regression model and panel data are used. The results of testing the hypotheses show that there is a significant relationship between calendar events and stock returns and the effect of Tuesday has been significant in estimations.

Keywords: Calendar events, Stock returns, days of the Week effects.

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[1] *Corresponding author's email: sara.zeinalpour@yahoo.com*

Introduction

In this study, we will explore a new field of Financial Management Science, entitled "Behavioral Finance". The traditional financial view is based on this assumption that people make logical decisions to maximize their wealth at a certain level of risk or minimize risk at a certain level of wealth. In contrast to this traditional view, financing is based on a behavioral approach (behavioral finance). Behavioral finance is a new approach in the field of finance and is based on this view that some psychological phenomena prevent it from being a logical investor (Rahnama Rostashti et al., 2010).

The problem that follows in this research is “The days of the Week effects." The effect of the week is one of the "disruptions" of the capital market, which is one of the categories of "periodic or calendar effects" and claims that in different days of the week, in terms of the main variables of the market, namely returns, volume of transactions, and the risk, there is anomalies. In other words, there are regular patterns in time series behavior of these variables in the days of the week. Therefore, it is possible to generate extra or unusual returns by generating strategies for these daily patterns (Heibati et al., 2012).

In the present study we examine the days of the Week effects on the “stock returns" of companies. The modeling of calendar effects in stock markets, from the perspective of academic and financial science employees, is a matter of importance in terms of its use in predicting stock returns. Several empirical studies have investigated the effects of calendar effects on stock returns. These studies show that in most countries, there are specific days from the week or specific months of the year that on the average stock returns in these periods tend to be highest or lowest. In other words, stock return act asymmetrically for all days of the week or months of the year. These observed experiences are in contrast to Efficient-market hypothesis, in which prices are random and do not follow a particular process (Bazzan et al., 2013). The effect of weekdays is a phenomenon that derives from the theory of efficient market, which means that the average daily stock returns in different days of the week are not the same (Yahyazadehfar et al., 2004).

According to this theory, stock market abnormalities should be eliminated immediately after the discovery and reporting when the inefficiency is so high that it operates profitable. These Stock market anomalies can be divided into two categories: Calendar Anomaly (seasonal) and no calendar Anomaly. The days of the Week effects are considered as Calendar Anomaly, which emphasizes the existence of behavioral patterns in stock returns in the past. That is, standardized returns are not the same for all weekdays (Bazzan et al., 2013).

Given that the goal of each investment is to take profit, investors tend to buy stocks at lower prices and sell them at higher prices. Therefore, studying the effect of weekdays on the stock market can be important. This issue has been discussed by researchers in developed and developing countries in different periods. In most of these studies it has been determined that the effect of weekdays on stock market returns is not the same and depends on the country and the desired day. In most of these studies, the highest and lowest return were related to the last and first working day of the stock market. However, the study of this work in countries with emerging stock exchange, such as the Tehran Stock Exchange, is more and more needed. The present research, to a large extent, can be a useful guidance for shareholders in buying and selling stocks.

According to the efficient market theory, investors are fully rational in financial markets. Therefore, the days of the Week effects as one of the major anomalies in the country's largest financial market are as conflicts with the efficient market theory. Similarly, it can be said that the absence of days of the Week effects can be interpreted as evidence of market efficiency (Yamouri et al., 2003).

Calendar effects have not been studied directly in the Iran until now. Despite the lack of internal records about calendar effects, the aim of the present study is to investigate whether weekdays (calendar effects before and after the earnings announcements) have a significant effect on the stock returns of listed companies in Tehran Stock Exchange or not.

Related literature review and research background

Stock returns

Return in investment is a driving force that creates motivation and rewards investors. Return of investment is important for investors, to make all investments for profit. Evaluating returns is the only rational way (before risk assessment) that investors can do to compare alternative and different investments. For the better understanding the performance of investment, it is necessary to measure the actual returns (related to the past). In particular, the study of historical returns plays an important role in the estimation and prediction of future returns (Farzipour, 2016). Concerning the concept of return, Markowitz believes that the concept of return from an investor to another investor may be different, but investors prefer to get the most out of it, to the least. Francis also believes that if an investment is considered a form of money transfer, which is expected to receive extra money, then each investment will have a degree of risk that requires losing that money in the present, for the purpose of obtaining future returns (Yahyazadehfar et al., 2004).

Some other definitions concerning the return on investment are as follows:

Any stock or portfolio of stocks, if bought, maintained, and sold at a specific time, yields a certain return for its owner. This returns includes price changes and the benefits of ownership. Returns are usually made up of two main parts:

(A) Dividend: The most important component of returns is dividend, which is a cash flow in the investment period and can be in the form of interest or Dividend Per Share.

(B) Capital gain (loss): This component, which is due to the increase (decrease) in asset prices, is a capital gain (loss) (Jones, 1999).

The return on a financial asset within a year can be interpreted as a discount rate that, if we calculate the future cash flows with it, the present value is equal to the asset price.

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The return on an investment is an exploratory cash flow that is acquired by the owners of that investment over a given period of time. Returns are expressed as a percentage of the value of the investment made at the beginning of the period (Afshari, 2001).

Calendar effects and stock returns

Several empirical studies have been conducted on the effects of calendar on stock returns, which indicates that returns tend to be higher (or lower) than their average. The study of calendar effects is related to behavioral finance, because many of the calendar effects are in contradiction with the efficient market hypothesis, in which prices are random and do not follow a particular trend. One of the consequences of a efficient market hypothesis is that, given the information available, it is not possible to obtain an abnormal earning. Osborne's research from 1962 to 1959 suggests that stock prices and commodities have a random motion and the behavior of stock price changes is a random change. The concept of this statement is that techniques based on past price information are not capable of generating higher than normal returns.

Samuelson (1965) offers a rational theory of the efficient market hypothesis that, if the market is competitive and normal trading profit is zero, according to that theory, unexpected price changes in markets with uncertainty should act as an independent random change. Their argument is that unexpected price changes represent new information.

Because the new information is in accordance with the new conditions, it contains information that can not be deduced from the previous information, so the new information should be independent over time. Therefore, if the normal unexpected profit is zero, then unexpected changes in the price of the securities should be independent over time. The argument here is that if the behavior of individuals is not rational, is the capital markets still efficient? For example, if information for all investors is unbiased, non-costly and valuable, but too much for them to be trusted, then what will happen? Are current market prices rising? If this happens then will there be a learning process that will bring the market back to a rational balance?

There are three variants of the hypothesis: "weak", "semi-strong", and "strong" form. The weak form of the EMH claims that information on past prices and returns is not workable to achieve higher returns. The semi-strong form of the EMH claims no investment can be made more returns through the use of buying and selling methods based on any existing public information. The strong form of the EMH claims no investment can be achieved more returns by using any information, whether public or non-public (Bazzan et al., 2013).

Clearly, the third form of market efficiency is the strongest type of efficiency. If the markets are in a strong form, then prices fully represent all available information. Therefore, according to this hypothesis, if inefficiencies are effective, the stock market’s anomalies should be eliminated immediately after the discovery and reporting.

Dimson and Marsh (1999) showed if only one of these anomalies disorders becomes public, then part of the anomaliy will disappear or go backwards. Thus, if the flow of information is continuous and prices reflect all the information, we expect that the return on Monday (the first working day of the week) is almost three times larger or higher than the return on the rest of the week, and this is due to three calendar days between closing the market on Friday until its opening on Monday. But if we accept that information flow on the weekend is unimportant, Monday's return should be the same on the rest of the week. However, studies suggest that both of these hypotheses have not been approved in the US and many countries (Borgs, 2009).

The results of Kepler and Zoe (2003) showed that in 18 stock markets in developed countries, high returns are available from November to April compared to other months of the year. Therefore, the sub-period between November and April was considered as good months and sub-periods between May to October were bad months in stock markets in these countries.

Rajab (2004) also studied the possibility of predicting the effects of weekdays on Oman Stock Market, and the result of his research suggests that at the beginning of the week the returns were significantly negative and at the end of the week was significantly higher than other days. He cited the result for the operations and process of settlement in the country, He stated that investors should set their buy and sell timing based on these patterns and their logic is to not sell stocks at the first days of the week.

In 2004, Frieder and Saberamaniyum tested the effects of religious holy days on the returns and volume of transactions and documented that two sacred Jewish days, called Rosh Hashanah day and Yom Kipour (or day of the atonement) has effected on the volume of transactions and returns of the market, so that the volume of trading in both days is relatively low, Of course, given the self-sufficiency of Jewish traders, the markets are predictable in those days. The average returns immediately after the Rosh Hashanah day, which is the joyous day of the New Year, abnormally rises. Similarly, the average returns are unusually negative shortly after the Yom Kippur, the day the Jews fend for their past mistakes. These effects seem consistent with the feelings that may be present on these sacred days.

Seyed et al. (2005) in a research entitled Seasonal anomalies on returns and Stock Viability: The Ramadan Effect Using the Garch Model and Data from the Saudi Stock Market, examines the relationship between the volatility of returns and calendar effects such as Ramadan. This research showed a systematic pattern of decreasing volatility during Ramadan, which implies a predictable divergence in market risk price. An examination of transaction data shows that this anomalies is consistent with declining trading during Ramadan.

Gao and Wang (2007) in their study evaluated the stock returns of the Chinese stock markets and concluded that stock returns on Monday were less than the other days of the week, in other words, stock returns is negative and on Friday it is more than the other days of the week. Also, the January effect was not seen in the Chinese markets, but in March, the highest returns were in March and the lowest in July.

Jones and Ligon (2008) explored the supply of stocks on different days of the week and the results of their research indicate that Monday's returns is lower than other days of the week, and it's better to issue initial offering on a day other than Monday.

Bialkowski et al (2009) in a study entitled Piety and Profit: investigate the anomolies of the stock market during the holy month of Muslims about the daily stock market returns in 14 countries with a dominant Muslim population between 1989 and 2007 (that is, 129 months of Ramadan. The results of this research indicate that during the month of Ramadan, stock returns were significantly higher than other months, but their volatility were reported less. Their results did not show significant differences in the volume of transactions between Ramadan and other lunar months. According to these researchers, the findings of research were consistent with previous research that Ramadan has a positive impact on the mental states of individuals, that improved the sense of solidarity, participation and social identity of Muslims around the world, which has led to the creation of optimistic beliefs that affect Muslim financial decisions.

Alhajieh, Rhode and Rogers (2011) in their research, investigate the emotional reaction of investors and the anomalies of the calendar in case study of Ramadan on the stock market deals of Muslim countries in the Middle East, including Turkey, Jordan, Bahrain, Qatar, Kuwait, UAE, Egypt and Saudi Arabia. They used stock trading data for the years 1992 to 2007 in Ramadan in these countries. The results indicate that the trading strategy is not sustainable in some particular days, such as the first and last days of Ramadan, but the adoption of a trading strategy during the middle of this month can be beneficial if transaction costs are properly covered.

Kapural and Zakirava (2017) investigated the relationship of calendar events with stock returns in Russian companies. The purpose of this study is to examine whether the calendar analyzes (such as January, day of the week, and months of the year) describe the Russian stock market, which can be interpreted as evidence against market efficiency. Experimental results indicate that considering transaction values (roughly through the expansion of the demand request): when these are analyzed, the calendar abnormalities disappear and therefore, therefore, there is no evidence of opportunities for exploiting them based on market prosperity.

Considering the fact that in the capital market of Iran, quantitative studies on the effect of calendar events with stock returns of companies accepted in the Tehran Stock Exchange have been conducted, this research is one of the first studies that investigates the effect of earning announcement on the stock return of the company Which is accepted on the Tehran Stock Exchange, and states that the day of announcing the earning on which day of the week has a greater impact on stock returns. Considering the theoretical foundations and the research background, the hypotheses of the present research are presented as follows:

Hypothesis 1. There is a significant relationship between Saturday and stock returns in TSE listed companies.

Hypothesis 2. There is a significant relationship between Sunday and stock returns in TSE listed companies.

Hypothesis 3. There is a significant relationship between Monday and stock returns in TSE listed companies.

Hypothesis 4. There is a significant relationship between Tuesday and stock returns in TSE listed companies.

Hypothesis 5. There is a significant relationship between Wednesday and stock returns in TSE listed companies.

Methodology of research

Research method

The current research based on the purpose, is categorized in applied and Post-event research. Also the present study is descriptive and correlational in terms of method and nature of the research. The present research studies the relationships between variables and seeks to prove this relationship in the present situation based on historical data.

Data collection

The population of this research includes Tehran Stock Exchange listed companies during the period of 2012 to 2016, and the selected sample has been taken according to the following criteria by systematic elimination sampling:

1) Due to the different nature of the activities, they are not part of the investment, intermediation, holding, leasing or banks companies.

2) The end of the fiscal year of the company is 29/12 or there is no change in the fiscal year during the research period.

3) Companies from the beginning of 2012 to the end of 2016 actived in the Tehran stock exchange.

4. During the research period, there is a continuous activity and their transactions in the stock exchange are not interrupted for more than three months.

Due to Table 1., 160 firms and 800 firm-year were selected as sample members.

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Table 1. Purposive Sampling Research

NO	Purposive Sampling	Number
1	Number of Companies listed in Tehran Stock Exchange	452
2	Due to the different nature of the activities, they included investment companies, brokerage, holding, leasing and banks	(110)
3	Companies that did not end their financial year ending at 29/12 or have changed the fiscal year during the research period.	(125)
4	The listed companies have not been listed on the Stock Exchange since the beginning of the year 2012 to the end of 2016.	(26)
5	During the research period, there was no continuous activity and their transactions in the stock exchange had been interrupted for more than three months	(31)
6	The total number of companies remaining due to the restrictions	160

The research model and the variable definition:

The following model has been used to investigate the relationship between calendar events and stock returns of companies (H1 to H5 hypotheses):

$Ri,t = \beta_0 + \beta_1 D_{1t} + \beta_2 D_{2,t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5,t} + \beta_6 SIZE_{i,t} + \beta_7 MB_{i,t} + \beta_8 LEV_{1t} + \beta_9 AGE_{i,t} + \beta_{10} INSOWN_{i,t} + \varepsilon_i$ (1)

In the above relationship:

The dependent variable

R_{it}: The daily return of the stock exchange companies, which is measured as the average return before the earnings announcement and after the earnings announcement.

Independent variable

D_{it} (i = 1,2,3,4,5): The dummy and independent variables that representative the working days of the week from Saturday to Wednesday. If it is on Saturday, then D_1 is equal to one and otherwise zero. Other virtual variables also represent other days of the week, respectively.

Control variables

The set of research control variables is as follows:

SIZE: The size of the company, which is equal to the logarithm of the day value of the firm's stock market at the end of the year.

MB: The Market-to-Book ratio is defined as the market value of a firm's equity divided by the book value of equity.

LEV: The financial leverage is equal to the total debt ratio to the total assets of the company.

AGE: Years of activity in the stock exchange (year studied mines year of admission to the stock exchange).

INS_OWN: The percentage of institutional ownership, the percentage of the ownership of large investors, such as banks, insurance companies, investment companies, leasing and holding companies, the pension fund, the capital investment company and the assistance committee, etc. That volume Majority of their operations are on their stock trades. The total amount of shares held by these investors will be calculated from the financial statements (Bush, 1998).

ε_t: residuals of regression model.

Empirical result

Descriptive Statistics

Table 2 shows the descriptive statistics of the research variables ** which describes the descriptive parameters for each variable separately. As you can see, the minimum, maximum, mean, median, standard deviation, skewness and Kurtosis of each variable are inscribed at 800 observations.

Table 2. Descriptive Statistics

	R	D1	D2	D3	D4	D5
Mean	50.27275	0.133750	0.158750	0.160000	0.117500	0.206250
Median	15.65000	0.000000	0.000000	0.000000	0.000000	0.000000
Maximum	877.1700	1.000000	1.000000	1.000000	1.000000	1.000000
Minimum	-65.75000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	102.9724	0.340596	0.365671	0.366835	0.322217	0.404865
Skewness	3.005121	2.151984	1.867597	1.854852	2.375665	1.452008
Kurtosis	16.59812	5.631037	4.487920	4.440476	6.643783	3.108327
Jarque-Bera	7367.728	848.2167	538.8528	527.8959	1195.076	281.5015
Probability	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	40218.20	107.0000	127.0000	128.0000	94.00000	165.0000
Sum Sq. Dev.	8472053.	92.68875	106.8388	107.5200	82.95500	130.9687
Observations	800	800	800	800	800	800

Table 2 (continuous): Descriptive Statistics

	SIZE	MB	LEV	AGE	INSOWN
Mean	14.13500	2.389221	0.554193	17.90000	38.56505
Median	13.90132	2.125806	0.565131	17.00000	30.97000
Maximum	18.86298	27.04123	0.960502	50.00000	98.93000
Minimum	9.828764	-11.23888*	0.012733	1.000000	0.000000
Std. Dev.	1.640060	2.205885	0.197161	8.905849	32.49566
Skewness	0.604971	3.947508	-0.313636	1.184838	0.338455
Kurtosis	3.534482	48.15365	2.567107	4.571620	1.654830
Jarque-Bera	58.32103	70039.44	19.36217	269.5117	75.58968
Probability	0.000000	0.000000	0.000062	0.000000	0.000000
Sum	11308.00	1911.377	443.3544	14320.00	30852.04
Sum Sq. Dev.	2149.147	3887.879	31.05924	63372.00	843718.4
Observations	800	800	800	800	800

* The number -11.23 related to Iran Tire Company in 2015.
**Model variables are estimated in millions of Rials.

Unit root test of variables:

The results of the unit root test for variables are described in Table 3. As the results show, all variables in the research are stationary in 800 observations.

Table 3: unit root test of variables

Variables	Levin,lin & chut		Unit root test result
	Prob	Statistic	
R	0.0000	-32.0920	Confirmed
D1	0.0000	-9.70090	Confirmed
D2	0.0000	-8.54397	Confirmed
D3	0.0000	-7.75721	Confirmed
D4	0.0000	-6.40364	Confirmed
D5	0.0000	-8.96719	Confirmed
SIZE	0.0000	-65.4088	Confirmed
MB	0.0000	-66.6680	Confirmed
LEV	0.0000	-18.5647	Confirmed
AGE	0.0000	-108.446	Confirmed
INSOWN	0.0000	-56.4658	Confirmed

Correlation test

Table 4 shows the Pearson correlation coefficients among the independent variables of the final model. Regarding the results of Table 4, it was found that the correlation coefficient is not very high or very low (nearly 1+ or 1) that affects the results of the regression analysis. As a result, there is no linear relationship between independent variables.

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Table 4: Pearson correlation coefficients among the independent variables

Correlation	R	D1	D2	D3	D4	D5	Size	Mb	Lev	Age	Insown
R	1.00										
D1	0.03	1.00									
D2	0.05	-0.17	1.00								
D3	-0.06	-0.17	-0.18	1.00							
D4	0.12	-0.14	-0.15	-0.15	1.00						
D5	0.02	-0.20	-0.22	-0.22	-0.18	1.00					
SIZE	0.07	-0.05	-0.04	-0.02	0.01	0.03	1.00				
MB	0.06	0.04	-0.07	-0.00	0.01	-0.02	0.11	1.00			
LEV	-0.10	-0.01	0.00	0.01	-0.05	-0.01	-0.24	0.01	1.00		
AGE	0.01	-0.09	0.01	-0.04	0.03	-0.02	-0.06	0.06	0.08	1.00	
INSOWN	0.03	-0.00	0.02	0.01	0.030	0.00	0.22	0.03	-0.14	-0.04	1.00

Heteroscedasticity tests of residual model

According to Table 5 and P-value obtained with a probability of less than 0.05, in the model of the research hypothesis, there is a heterogeneity of variance, Therefore, EGLS estimations have been used to resolve this problem.

Table 5: Heteroscedasticity tests of residual model

Method	df	Value	Probability
Bartlett	4	224.9186	0.0000
Levene	(4, 794)	63.20740	0.0000
Brown-Forsythe	(4, 794)	46.84987	0.0000

Normality test of residual model:

the Jarque-Bera test results, indicate that the residuals from the estimation of the research model, which are less than 0.05 probabilities, do not have a 95% confidence interval for the standard normal distribution. In this regard, given the high number of observations, it is possible to ignore the normalization of the distribution of residuals (Souri, 2010).

Table 6: Normality test of residual model

Method	Value	P-value	Hypotheses
Jarque-Bera	6.42	0.040	H1 to H5

Determination the type of model's estimation:

According to Table 7, given that the P-value obtained from the F-Limer test in the model is more than 5%, pooled data model will be used to estimate these regression model.

Table 7: Determine the type of estimation of the research model

Hypotheses	P-Value	Statistic	Method	Result
H1 to H5	1.000	0.57	F-Limer	Pooled

Investigating the effect of calendar events on stock returns of companies

Table 8 shows the results of estimating the research model using Eviews9 statistical software in a pooled data model:

Table 8: Investigating the effect of calendar events on stock returns

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D1	18.97848	17.36633	1.092832	0.2749
D2	30.48180	17.24162	1.767920	0.0776
D3	-5.025564	16.82211	-0.298748	0.7652
D4	38.17555	17.41854	2.191662	0.0288
D5	12.06080	16.51292	0.730386	0.4654
SIZE	-0.466976	1.365646	-0.341945	0.7325
MB	1.653614	1.100018	1.503262	0.1333
LEV	-17.95724	10.59826	-1.694358	0.0907
AGE	0.167689	0.276441	0.606597	0.5443
INSOWN	0.083388	0.071679	1.163361	0.2451
C	43.58683	25.86538	1.685142	0.0925
AR(1)	-0.186775	0.037812	-4.939623	0.0000
	Weighted Statistics			
R-squared	0.152224	Mean dependent var		70.02387
Adjusted R-squared	0.135998	S.D. dependent var		109.9337
S.E. of regression	103.9107	Sum squared resid		6769989.
F-statistic	9.381823	Durbin-Watson stat		2.488561
Prob(F-statistic)	0.000000			

* It needs to be explained that the existence of AR(1) variable in the model implies that in the error term there is a First-Order correlation, which is solved by placing its variable, and the amount of Durbin-Watson statistics in This research has been 2.48, which shows there is no autocorrelation in its error term.

** However, considering that the probability of control variables is greater than 0.05, then after doing the removing redundant tests, the best fit has been performed from the research hypothesis test.

Redundant Variables Test in the research model

In this test, the assumption of H0 is that if the variable is eliminated from the right side of the regression equation, it does not create disturbance in the validity of equation. Table 9 shows the result of the test for the redundant control variables in the research model:

Table 9: Redundant Variables Test in the research model

	Value	df	Probability
F-statistic	1.386965	(5, 627)	0.2272

Given that the significance level of the test is greater than 0.05, the H0 hypothesis is accepted. Therefore, these variables are considered as redundant variables and the model is re-estimated after eliminating these variables.

The result of the best fitting estimation

Table 10 shows the results of estimating this model after removing the redundant control variables using Eviews9 software using the pooled data method:

Table 10: The result of the best fitting estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D1	21.39427	17.41437	1.228541	0.2197
D2	31.17638	17.33726	1.798230	0.0726
D3	-4.581181	16.94076	-0.270424	0.7869
D4	41.98055	17.31347	2.424734	0.0156
D5	13.81241	16.57046	0.833556	0.4048
C	35.95955	15.70296	2.289986	0.0224
AR(1)	-0.171328	0.037499	-4.568856	0.0000
	Weighted Statistics			
R-squared	0.142847	Mean dependent var		70.02387
Adjusted R-squared	0.133353	S.D. dependent var		109.9337
S.E. of regression	104.0696	Sum squared resid		6844867.
F-statistic	15.04637	Durbin-Watson stat		2.487424
Prob(F-statistic)	0.000000			

In considering the significance of the model, considering that the probability of F statistics is less than 0.05 (0.00), with a confidence of 95%, the significance of the whole model is confirmed and highly valued. The coefficient of determination model also indicates that 13% of the variation of dependent variable is predictable by the independent and controlled variables entered in the model. Also, the Durbin-Watson stat should be between 1.5 and 2.5, which in this study is 2.48, showing that there is no correlation in its error term. The results of the best fitting estimation indicate that, if the earning announcement day is Saturday, Sunday, Monday and Wednesday, there is no statistically significant relationship between earnings announcement day and stock returns, and the first, second, third hypothesis and the fifth study will not be accepted. But if the earning announcement day is on Tuesday, it will have a significant relationship with stock returns, and then the company's stock returns will increase on Tuesday. Therefore, there is a significant relationship between Tuesday and stock returns in TSE and the fourth hypothesis will be accepted.

Conclusion

The problem that was investigated in this study was the relationship between weekdays, including periodic or calendar effects, on stock returns, which claims that there is a heterogeneity on stock returns in different days of the week, In that case, it is possible to generate extra returns by formulating strategies for these daily patterns. Therefore, this issue was tested based on linear regression model and panel data method using Eviews9 software. The results of the research model showed that:

- Saturday does not affect company's stock returns.

- Sunday does not affect the company's stock returns.

- Monday does not affect the company's stock returns.

- On Tuesday, it affects the company's stock returns. So, if the day of the earnings announcement on Tuesday is high, stock returns will increase.

- Wednesday does not affect the company's stock returns .

Therefore, it can be said that there is a significant relationship between calendar events and stock returns in Tehran Stock Exchange.

Suggestions

Tehran Stock Exchange investors maybe more productive by using the results of this research in the framework of certain assumptions and constraints that are there, or less risky. According to the research findings, to investors in the Tehran Stock Exchange who are looking for an opportunity for arbitrage and extra returns are recommended to sell shares on Tuesday due to higher returns. On the other hand, the results show that there is still the possibility of obtaining the returns from the information analysis for investors in Tehran's stock market, which is contradictory with the market-based market hypothesis. Therefore, considering the identification of daily effects in Tehran Stock Exchange and questioning the effective market hypothesis in this stock exchange, it is recommended that stock market policymakers consider this issue to regulate the market mechanism and take into account the identified effects. Eventually, the issuers of securities can use the results of this research to control the timing of their issue, in order to reduce the risk and cost of publication.

for the future research the following are suggested:

1) The effect of weekdays on stock returns was Reviewed in this study. It is suggested that future researches tested the effect of other calendar events such as religious festivals, seasonal factors, etc.

2) The effects of calendar events on returns in other markets in Iran, such as Iran Mercantile Exchange, gold market, automotive market, foreign exchange market, etc.

3) Assessing the impact of calendar events by considering the size of companies and explaining whether the size of the company exacerbates or mitigates the impact of calendar events.

4) It is suggested that the subject of the present research be divided into different industries in the Tehran Stock Exchange to control the industry's effect.

5) Checking out what are the real reasons for weekdays and which of the possible reasons is stronger.

Limitation of Research

1) This research, like other descriptive studies, has time and locative limitation. The time of this research is 5 years from 2012 to 2016 and its location is Tehran Stock Exchange. Therefore, we need to focus on generalizing its results to other times and other statistical societies.

2) Since there are some limitations for choosing a sample from listed companies in the Tehran Stock Exchange, the generalization of the results to the group of companies admitted to the stock exchange, which has different characteristics with the sample of this research or are from other industries, should be done with caution.

3) The lack of similar research (internal and external), namely, the lack of research resources, can be considered as one of the main constraints of the implementation of this research.

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