Advances in Environmental Biology, 7(9): 2415-2422, 2013
ISSN 1995-0756

This is a refereed journal and all articles are professionally screened and reviewed **ORIGINAL ARTICLE**

Study of the Factors Affecting P/E Coefficient Given Type of Industry (Growth Rate and Payout Ratios) in Tehran Stock Exchange

[1]Razieh Divanbeygi, [2]Dr. Reza Tehrani

Associate Professor, University of Tehran Faculty of Management

Razieh Divanbeygi, Dr. Reza Tehrani: Study of the Factors Affecting P/E Coefficient Given Type of Industry (Growth Rate and Payout Ratios) in Tehran Stock Exchange

ABSTRACT

The present study discusses the factors affecting pricing earnings per share (Growth Rate & Payout Ratios) given type of industry. For hypothesis test of the study, the panel data model which is a combination of two sectional and time series data methods, and Eviews software were used. In this respect, share valuation methods based on assets and base of profitability and other common methods were studied. One of the main ways of valuation which is often used by analysts, price-earnings (P/E) coefficient. Dependent variable of the study, P/E, has been prepared in two forms of historical and prediction. The factors affecting price-earnings ratio include rate of payment of capital gains (b) and return rate ® and growth rate of dividend (g). It goes without saying that price to earnings ratio changes directly with rate of payment of capital gains and growth rate and, vice versa, with return rate. The results obtained in predicted P/E, due to inefficiency of predictions in Iranian inefficient market, led to rejecting the hypotheses that there is a relationship between P/E and growth rate and dividend percentage, and type of industry. But, in historical P/E, the hypothesis 1 saying that there is a significant relationship between dependent variable and dividend percentage was supported. There is no significant relationship between historical P/E and growth rate (gr).

Key words: Valuation, Price-Earnings Ratio, Growth Rate, Payout Ratio, Panel Data.

Introduction

Investment of financial funds in different assets is only a part of all financial decisions and planning, and each person should set a general financial plan. Such a plan entails a valuation criterion [1]. The important problem is that what determines ordinary shares value? What ways do investors use for valuation and or selection of shares? Skilled analysts of the Stock Exchange prefer to use price-earnings per share (P/E) coefficient way. As a result, investors may through making decision on how many rials they should pay for obtaining any rial of earnings. In addition, this criterion is a known and special criterion with which most of investors are familiar. The results of this study can help them in decisions on investment in different industries and quickly comparing to industrial P/E. Because the number of estimations needed to be used in this method is less than that of other methods, it is widely used. On one hand, P/E model is less complicated than dividend discount model, and is an intuitive model [1]. The main aim is that while using this coefficient, its important and effective factors can be taken into consideration so that they do not confuse when making decisions.

Other goals of this study are to understand scientific concept based on valuation category theory and P/E coefficient and the important factors affecting this coefficient. In addition, study of these factors experimentally in Tehran Stock Exchange and analysis of the results obtained and identification of type of relationships between these factors affection P/E in different industries so that investors have a real insight for making effective and useful decisions in capital market.

Materials and Methods

A company's shares can be valued in different ways, and there are different bases for this. Principally, there are two principal and relatively different viewpoints in valuation of shares, one based on assets and, other based on profitability. There is a middle viewpoint as well [2].

Because of familiarity of most of financial researchers with the above models, the following is only a brief description of these models:

Share valuation methods based on the company's assets:

- Face value
- Book value

Corresponding Author

Dr. Reza Tehrani, Associate Professor, University of Tehran Faculty of Management.
E-mail: r.divanbeygi@yahoo.com

- Share value based on net assets value

$$\text{Share value based on net assets value} = \frac{\text{current value of assets} - (\text{total liabilities} + \text{preferred stock})}{\text{number of ordinary shares}} \quad (1)$$

- Settled value of stock

$$\text{Share value based on net assets value} = \frac{\text{funds obtained from sale of assets} - (\text{total liabilities} + \text{preferred stocks} + \text{settlement expenses})}{\text{number of ordinary shares}} \quad (2)$$

- Replacement value: in this method, first all expenses needed for re-establishing the company (to current situation) are estimated and then, the amount obtained is divided by the number of its shares to calculate dividend value.

Share valuation methods based on profitability viewpoint:

- Growth-free rate model: in growth-free rate model, dividend rate is constantly fixed.

$$\hat{P}_0 = \frac{D_0}{K_{cs}} = \text{Dividend discount model with growth - free rate} \quad (3)$$

- Fixed growth rate model: in calculating ordinary share value, it is often assumed that dividend rate increase over time, and through growth rate, dividend of future fiscal years can be estimated.

$$\hat{P}_0 = \frac{D_0(1+g)}{(1+K_{cs})} + \frac{D_0(1+g)^2}{(1+K_{cs})^2} + \frac{D_0(1+g)^3}{(1+K_{cs})^3} + ... + \frac{D_0(1+g)^\infty}{(1+K_{cs})^\infty} \quad (4)$$

- Multiple (variable) growth rate model: According to this model, it is assumed that growth rate within a short term for some fiscal years (usually 2 to 10 years) has a quick process, but within a long term has no stability (e.g., fixed growth rate). This model can be shown as follows:

$$\hat{P}_0 = \sum_{t=1}^{n} \frac{D_0(1+g_1)^t}{(1+K)^t} + \frac{D_n(1+g_e)}{K-g_e}\frac{1}{(1+K)^n} \quad (5)$$

Where, P0 = intrinsic and current value of shares; D0 = current dividend; g1 = growth rate more / less than usual; gc = fixed growth rate of dividend; K = return rate expected by shareholder; n = number of fiscal years of growth more (less) than usual; Dn = dividend at the end of fiscal year of abnormal growth

- Complicated valuation models

For example, a share may have a varied dividend during some fiscal years of maintenance, and for the last fiscal year of maintenance, no sale price can be predicted for it. However, instead, an inference can be made concerning earnings per share growth rate for future fiscal years. In this case, the valuation equation will be changed as follows:

$$= \sum_{t=1}^{\infty} \frac{D_t}{(1+i)^t} + \frac{P_n}{(1+i)^n} \quad (6)$$

- Determination of share price using price to earnings coefficient

Price to earnings (P/E) ratio is one of the important and common ratios in analyzing and evaluating ordinary shares of companies. To determine share prices using this ratio, we can act mathematically as follows:

$$\text{Price} = \frac{\text{P}}{\text{E}} \times \text{Earnings} \quad (7)$$

- Replacement value

Replacement value of a share is, in fact, the value of its securities can be replaced.

Valuation based on a combination of viewpoints based on assets and profitability:

Valuation of shares inclusive of inflation is of this category.

In the following valuation, inflation factor is used to make actual the flow of future earnings per share:

$$V = \frac{Dcpp}{k-g} + \frac{\Delta\text{Net Assets}}{k-g_1} \quad (8)$$

Where, k = discount rate used or expected return; g = real rate of growth and earning; g1 = assets growth due to inflation

Δ Net Assets: Difference between net assets value in the fiscal years t and t-1. The first statement at the right of the equation, calculates current value of future earnings per share, adjusted in terms of inflation, inclusive of inflation-free growth rate; and the second statement, interferes increased assets value following adjustment in terms of inflation in the valuation equation.

Other common methods of valuation of companies:

Since there are different viewpoints on valuation, here we discuss some other models commonly used by stock exchanges throughout the world [3].

- Discounted cash flow (DCF) model

Advances in Environmental Biology, 7(9): 2415-2422, 2013
ISSN 1995-0756

This is a refereed journal and all articles are professionally screened and reviewed **ORIGINAL ARTICLE**

$$\text{Company's value} = \frac{\text{Current value of cash flow after prediction period}}{\text{current value of cash flow during prediction period}} \quad (9)$$

- Economic value added (EVA) model or economic profit

Economic value added is a product of extra return on an investment and investment made in company. The economic value added is calculated as follows:

$$EVA = \text{Invested} \quad (10)$$

In other words, economic value added equals to the difference between return on investment and capital expenditure multiplied by capital amount.

- Adjusted present value (APV) model

Company's value through adjusted present value model is calculated as follows:

$$V = Vuo \quad (11)$$

In other words, company's value equals to company's value while assuming the lack of debt (Vuo) plus present value of tax shield (DVTSo).

Valuation discussion follows the same historical change and development of financial theories; fixed growth theory valuation model by Gordon in 1962 was as a starting point. Loggin in 1977 found a positive relationship between P/E and dividend payment and expected growth for 500 shares of SSP, and White in 2000 obtained the same result. Baso in 1975 finds that portfolio with low P/E has a return more than high P/E. Alfakhai in 1944 investigated the effects of low size and coefficient in Canada and found that small firms got more return with more risk than large firms.

Baso in 1983 and Botter and Rulf in 1981 found evidence that return on stocks is positively influenced by fundamental values, while studies by Fama and Frenj in 1975 showed the reverse.

Fundasizgan and meymar Sinan in 2010 found that forming fundamentals and theories of pricing is more based on the profitability power, but this power is based on the past and, because the past can not be always a light for the future, earnings (E) remains fixed for a fiscal year, while price (P) changes everyday under different conditions including the related company's notices, and in this case, todays' P/E differs from another day's one. Fama and Frenj in a paper that published in 1990 used it as a variable affecting estimation of future returns on assets.

[4] find that, effects of the factors affecting aggregate earnings per share including the recent financial crisis and price to earnings ratio. Hence, the results show that there is a positive and significant relationship between aggregate earnings per share and price to earnings ratio of market value of companies and growth of earnings per share. The effect of growth rate and risk on P/E coefficient was discussed by [5], and the effect of inflation rate of company's size and lever ratio and fixed asset to total assets ratio was rejected. In addition, in the study by [6], portfolio with less P/E has a better performance than higher P/E. So, pricings are distant from intrinsic price. In the thesis of [7], the coefficient of weak correlation between refined economic value added and P/E coefficient was found. It can be said that forming market value of firms in Tehran Stock Exchange follows from Gordon's models and price to earnings ratio [8]. Perhaps successful performance of price to earnings ratio model can be attributed to its common application among Iranian investors. [9] found that there is no significant relationship between return and P/E. In the study by [10], prediction of share price using P/E of the rival company in terms of a special industry has less error and more accuracy. However, efficiency degree of market contributes to properly determining P/E, and distribution is more as inefficiency increases. [11] concluded that share price is influenced profit and cash profit and is not influenced by risk and expectations of growth, and P/E is not influenced by the factor of growth and risk, and there is difference between market price and real value.

Development of Hypotheses:

Given the analyses made, it can be said that forming market value of companies in Tehran Stock Exchange follows Gordon's Model and price to earnings ratio [8]. Perhaps, successful performance of the price to earnings ratio model can be attributed to its common application among Iranian investors. The existence of researches similar to this study, conducted in the other countries indicates the importance of this study, such as the research of price to earnings ratio, return on dividend, and share price of properties in Hong Kong [15] and the research (P/E prediction) conducted by Raili, Grikez, and Vang, in 1983 and Bivi and Goodman in 1985, as well as the research of [12] about the relationship between P/E ratio and the ratio of return on share, size and return on shares in Jordanian companies,

Corresponding Author

Dr. Reza Tehrani, Associate Professor, University of Tehran Faculty of Management.
E-mail: r.divanbeygi@yahoo.com

and study of earnings per share, cash earnings per share, the ratio of pre-tax net profit to sale – net return on assets, conducted by Apoundgeder in 1993; and the research of who work on the role of P/E coefficient in decision-making by managers of retirement funds for purchase of stocks; and the research work conducted in China, selecting 180 determinant stocks of Shanghai Stock Exchange as samples, and during 2002-2005, an experimental study was carried out with comparative model, on the important factors affecting price to earnings ratio. The contingent reason of the theory deviations shows that determination coefficients are all high and close to 1, and the rate of interest obtained from the capital, the growth rate of dividend, the rate of total assets turnovers, return on net assets, share income rate, all have negative correlation with price to earnings ratio, that is unlike the theory analysis. B coefficient which is considered as an index that evaluates the risk of stock exchange market system of China, and the result of its estimation is unlike the theory analysis. [14] found that, Because stock exchange market of China was recognized to be unsafe and ineffective, it is necessary two important variables (growth rate and percentage of dividend) and industry to be studied with respect to P/E coefficient in our country.

In this study aims mostly at evaluating the factors affecting P/E ratio depending on type of industry.

Hypotheses of Research:

- There is a significant relationship between P/E and percentage of dividend.
- Relationship between P/E and Percentage of dividend differs in different industries.
- There is a significant relationship between P/E and growth rate.
- Relationship between P/E and growth rate differs in different industries.

This study is conducted by means of panel data method with the aid of Eviews software. Panel data method is a combination of cross-sectional data model and time series data method. This software is a statistical package, used for econometric analysis, and in fact, is the windows-based TSP software, but more developed than the latter, and it is used quicker and easier [18]. Since these data include sectional and time series dimensions, the problems raised from the application of sectional data (variance anisotropy) and time series data (e.g., self-correlation) should be investigated as well [16].

Methodology of research, given the subject of the study, is field study in terms of data gathering, and is categorized into applied researches. The statistical population consists of companies listed by Tehran Stock Exchange from 2006 to 2010 so that their fiscal year is closed to March 20. The statistical sample is composed of about fifty four firms in nine industries, selection of which is made randomly from among the statistical population, that is, the companies listed by Tehran Stock Exchange. In this study, Dickey Fuller unit root test and generalized Dickey Fuller, Levin Lin Chu, L. M., Pesaran and Shin were used. The results of unit root test and analysis of stability for GR (Growth Rate) variable and for P/E (Price to Earnings) were conducted historically and in terms of prediction and POR (Payout Ratio) variable in Eviews, and p-values 0.000, less than 0.05. So, the hypothesis of zero test on series non-stationary was rejected.

Results:

Calculating components of variables is described in detail.

Growth rate (GR): One of the most essential discussions when fixing share price is to estimate growth rate. In this research, to calculate growth rate, the formula of growth rate, $g = ROE \times (1 - b)$, is used, where, g stands for profit growth rate; b for percentage of dividend and ROE for return on shareholder's equity. Since ROE rate is applied in calculations of growth rate:

$$ROE = \frac{\text{net profit}}{\text{operating profit}} \times \frac{\text{operating profit}}{\text{income from sale}} \times \frac{\text{income from sale}}{\text{total assets}} \times \frac{\text{total assets}}{\text{share holders' equity}} \quad (12)$$

The above equation states that the second ratio forms margin of operating profit, the third ratio assets turnovers, the forth ration the ratio of liability of shareholders' equity plus one. In addition, from the multiply of the first two ratios, margin of net profit is obtained, indicating how different policies can affect return on shareholders' equity.

Payout Ratios (POR): Obviously, dividend is a function of profit, but the relationship between these two variables is more complicated than present dividend, that is a function of current profits. Dividend paid by companies show the actions set out by companies (such as previous profit) as well as the future expectations (such as expected profit in future).

The payout ratios are obtained from dividing cash profit by the announced profit. $POR = (DPS / EPS)$

Dependent variable of research (P/E): this variable is prepared in two ways of historical and prediction. In historical P/E, dividing the price of the last day of the year by twelve-month profit of the same year is used, while in predicted P/E, the average daily of predicted P/Es published by the Stock Exchange during those years.

Analysis and conclusion of predicted P/E:

General regression equation will be written as follows, if virtual variable of industry enters:

$$PE = C(1) * POR + C(2) * GR + C(3) * IND1 + C(4) * IND2 + C(5) * IND3 + C(6) * IND4 + C(7) * IND5 + C(8) * IND6 + C(9) * IND7 + C(10) * IND8 + C(11) + \varepsilon \quad (13)$$

Qualitative variables can be examined through adding a zero and one, and for k classes, k-1 instrumental variables should be used [19]. Then, regression was made in the forms of OLS, Fix, and Random, and integration capability test (LM) (Breusch-Godfrey) were carried out. The result is shown in Table 1.

Table 1:

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	34.69821	Prob. F(3,257)	0
Obs*R-squared	77.8343	Prob. Chi-	0

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 06/25/12 Time: 14:25
Sample: 1 270
Included observations: 270
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
POR	0.365202	0.977228	0.373712	0.7089
GR	-0.01109	0.032435	-0.34188	0.7327
IND1	-0.01564	0.803161	-0.01947	0.9845
IND2	-0.01483	0.805292	-0.01842	0.9853
IND3	-0.06871	0.81384	-0.08442	0.9328
IND4	-0.13901	0.809565	-0.17171	0.8638
IND6	-0.05806	0.812467	-0.07146	0.9431
IND7	0.040122	0.802217	0.050014	0.9601
IND8	-0.04652	0.806703	-0.05766	0.9541
C	-0.17555	1.04537	-0.16793	0.8668
RESID(-1)	0.583685	0.062162	9.389805	0
RESID(-2)	-0.11021	0.072301	-1.52437	0.1286
RESID(-3)	-0.08809	0.062686	-1.40519	0.1612

R-squared	0.288275	Mean dependent var	-1.51E-15
Adjusted R-squared	0.255043	S.D. dependent var	4.144074
S.E. of regression	3.576788	Akaike info criterion	5.433758
Sum squared resid	3287.906	Schwarz criterion	5.607015
Log likelihood	-720.557	Hannan-Quinn criter.	5.50333
F-statistic	8.674552	Durbin-Watson stat	2.0071
Prob(F-statistic)	0		

Given p-value of LM test, it can be concluded that the zero hypothesis on panel data is rejected. Then, Hausman test was conducted to examine selection of fixed or random effects. The result was to select random effects.

Analysis of variance anisotropy was conducted in sections. In order to remove the problem of variance anisotropy, we use GLS-WLS method. To prevent self-correlation, Breusch-Godfrey test was carried out. In order to remove the problem of serial self-correlation, the statement (AR1) is added to the right side of the equation.

Due to the existence of many meaningless variables in industries, we begin to omit the variables with the highest p from the model though omitted regression way. The final result is shown in Table 2.

Table 2:

Dependent Variable: PE
Method: Panel EGLS (Cross-section weights)
Date: 06/26/12 Time: 13:04
Sample (adjusted): 1386 1389
Periods included: 4
Cross-sections included: 54
Total panel (balanced) observations: 216
Iterate coefficients after one-step weighting matrix
Period weights (PCSE) standard errors & covariance (d.f. corrected)
Convergence achieved after 6 total coef iterations

Variable	Coefficient	Std.Error	t-Statistic	Prob.
IND2	-1.176245	0.427091	-2.754085	0.0064
IND6	-2.260808	0.535211	-4.224141	0
C	5.501551	0.199149	27.62536	0
AR(1)	0.528172	0.042232	12.50633	0
Weighted Statistics				
R-squared	0.56932	Mean dependent var		13.79189
Adjusted R-squared	0.563226	S.D. dependent var		8.422385
S.E. of regression	3.333431	Sum squared resid		2355.694
F-statistic	93.41507	Durbin-Watson stat		1.738542
Prob(F-statistic)	0			
Unweighted Statistics				
R-squared	0.26099	Mean dependent var		6.061449
Sum squared resid	2755.946	Durbin-Watson stat		1.890557
Inverted AR Roots	.53			

Table 3:

Dependent Variable: PETARIKHI
Method: Panel Least Squares
Date: 06/25/12 Time: 15:51
Sample: 1385 1389
Periods included: 5
Cross-sections included: 54
Total panel (balanced) observations: 270

Variable	Coefficient	Std. Error	t-Statistic	Prob.
POR	24.2439	5.000471	4.848323	0
GR	0.24433	0.159946	1.52758	0.1278
C	-11.60317	4.914692	-2.360915	0.0189
R-squared	0.100786	Mean dependent var		9.16775
Adjusted R-squared	0.09405	S.D. dependent var		19.57527
S.E. of regression	18.63202	Akaike info criterion		8.698689
Sum squared resid	92689.58	Schwarz criterion		8.738671
Log likelihood	-1171.323	Hannan-Quinn criter.		8.714744
F-statistic	14.96295	Durbin-Watson stat		1.864996
Prob(F-statistic)	0.000001			

Given the p-values provided, it can be concluded that there is no significant relationship between predicted P/E and payout ratio (POR). As a result, the hypothesis 1 is denied. In addition, there is no significant relationship between predicted P/E and growth rate (GR). As a result, the hypothesis 3 is denied. Given the variables of the industry entered, it is observed that except the industry 6 (other organic non-metal products) and the industry 2 (food and drink products), other industries are not significant. As a result, the hypotheses 2 and 4 are denied.

Historical P/E: Analysis and Conclusion:

In this study, the stationary test of variables of P/E and POR and GR was carried out as well. Then, the regression was made in the forms of OLS, Fix, and Random. Then, LM test was carried out. Given the p-value of LM test, it can be concluded that the zero hypothesis on panel data is accepted.

Due to the existence of many meaningless variables in industries, we begin to omit the variables with the highest p from the model though omitted regression way. The final result is shown in Table 3.

Given the p-values provided for the variables in the model, it can be concluded that there is significant relationship between historical P/E and payout ratio (POR), and given its coefficient, 24.24, this relationship is positive. As a result, the hypothesis 1 is denied. In addition, there is no significant relationship between historical P/E and growth rate (GR).

As a result, the hypothesis 3 is denied. Given the coefficient value, determination of independent variables causes 10% of dependent variable to be determined. About industries coefficient, it can be said that given omitted regression way, these coefficients also are omitted because of being meaningless, and the hypotheses 2 and 4 are denied as well.

Discussion and Conclusion:

As mentioned earlier in the results of research in the previous section, there is no significant relationship between predicted P/E and payout ratio

(POR) and growth rate (GR), and on one the other hand, there is no significant relationship between historical P/E and growth rate (GR) as well. Only between historical P/E and payout ratio (POR) there is a significant relationship. As the literature show, Iranian capital market has no efficiency. In inefficient markets, current prices of securities are not equal to intrinsic price of a company's share.

As mentioned earlier in the internal researches, the effect of inflation rate, size of company, the lever ratio, and the ratio of fixed assets to total assets was denied. In addition, portfolio with less P/E has better performance than its higher coefficient. So, pricings are distant from intrinsic price. Low correlation coefficient between refined economic value-added and P/E coefficient is another result of Iranian capital market [9] and receipt between return and P/E has no significant relationship. In the study by [10], he found that the efficiency degree of market has role in properly determining P/E, and with inefficiency, distribution is more. [11] concluded that share price is influenced by profit and cash profit and is not influenced by risk and growth expectations, and P/E is not influenced by the factor of growth and risk, and there is difference between market price and real value. In this way, in this study, in the section of historical P/E in investigation of the variable of percentage of dividend, we observe positive correlation coefficient, and correlation severity is at a good level. This indicates good policies of profit distribution. The dividend is of special interest to shareholders, and it is attempted that the ratio of total payment remains fixed during the time, that is a desired policy which can create a balance between dividend and future growth rate so that the wealth of shareholders maximize. Some factors affect profit payment such as accumulated profit as one of the financing sources and lacks the problems which exist in capital rise (for example, ownership and control of the company). However, capital expenditure (accumulated profit) is more than liability expenditure. On the other hand, the factors of the real world in which investors prefer low cash profit to high cash profit, is tax and share issuance expenses while, for some reasons, the companies may pay more cash profit to their stockholders, even if they are obliged to issue new shares for supplying it because current value of closer cash profits is more than current value of more distant cash profits. The results of being meaningless of growth rate can be made due to low return on investment. For the company which grows quickly as expected profit increases, investors would like to pay more. However, here, trust of the investor in expected growth and reasons of profit growth are important including: (1) inflation (2) the value of net profit the company holds and invests it again and (3) return rate of the company [18].

Suggestions for future researches:

Given the results obtained from this study, the following issues are suggested for future studies:

- Given the results obtained, it is suggested that for announcing P/E, more researches and studies are conducted and more applied strategies are made so that this variable which is used by most of the clients of Tehran Stock Exchange, provide the users with more accurate and reliable information.
- The researchers are recommended that since several factors play role in P/E coefficient, in a more comprehensive study, all of these factors such as percentage of dividend, growth rate of profit, size of company, and rate of expected return, and risk and etc… are examined within a longer time so that the effect of each of the factors are assessed more objectively.
- Since the application of pricing way with P/E coefficient for investors is a common and straightforward way, and the information of this way are made more easily available at the investors' hands, it is recommended that this coefficient by itself should not be used as base for decision-making, but along with it, such factors affecting it as rate of expected return and policies of dividend and growth rate and lever degree and … are taken into account. Therefore, in a study, the factors affecting it should be investigated more.
- Some researches should be conducted towards identification of linear and non-linear relationships of P/E estimated by real P/E of the companies in each year and analysis of the quality of these predictions, as well as the factors deviate these two variables and how to decrease deviation and more conformity of predictions with the reality.

Limitations of Research:

Lack of appropriate databases makes access to some financial statements and figures and statistics of interest time-consuming. The existence of differences in the companies in terms of management type and life of the company, as well as the difference in the possibility of access to low interest or high interest financial sources can be considered as different factors of this limitation.

References

1. Jones, Charles Parker, 2009. "Investment Management", translated by Dr. Reza Tehrani and Asgar Nourbakhsh, Negah Danesh Press, 5th edition. (in persian)
2. Abdollah Zadeh, Farhad, 2002. "Investment Management and Stock Exchange", Pardazeshgaran Publications. (in persian)
3. Ghalibaf Asl, Hassan; Rostami, Mohammad Reza; Ansari, Hojatollah, 2007. "Common Ways of Valuation of Companies and Introduction of

Appropriate Models", financial research, 9(24): 57-80. (in persian)
4. Shamsoddini, Mostafa and Shahraki, Javad, 2012. "Evaluation of the Effect of Financial Crisis and P/E Ratio on Compressed Earnings of Companies Listed by Tehran Stock Exchange", the Regional Congress on Accounting in the Age of Information Technology. (in persian)
5. Azizian, Afshin, 2006. "Study of the Factors Determining P/E in Companies Listed by the Stock Exchange", Master's Thesis, Shahid Beheshti University of Technology. (in persian)
6. Ebadzadeh, Kamal, 1999. "Analytical Study of Relationship between Return on Investment in Ordinary Shares and Price to Earnings (P/E) Coefficient in Tehran Stock Exchange", Master's Thesis, Shahid Beheshti University of Technology. (in persian)
7. Hosseini Azan Akhari, Seyed Mahdi, 2006. "Relationship between Refined Economic Value-Added and Earnings per Share and P/E Ratio", Master's Thesis, Shiraz University. (in persian)
8. Eslami Bidgoli, Gholam Reza; Bajelan, Saeed; Mahmoudi, Vahid, 2008. "Evaluation of Performance of Valuation Models in the Stock Exchange", financial research, 10(26): 21-40. (in persian)
9. Hejabi, Ruhollah, 2006. "Study of Methodologies of Analysis and Evaluation of Stocks Based on Price to Earnings Ratio", Bank and Economy Journal. (in persian)
10. Kalantari, Morteza, 2002. "Effect of Methods of Selection of Rival Companies on Accuracy of Evaluation of P/E", Master's Thesis, University of Tehran. (in persian)
11. Tehrani, Reza, 1995. "The Factors Affecting Share Price in Tehran Stock Exchange", Doctoral Thesis, University of Tehran. (in persian)
12. Al-Mwalla, M., A.M. Al-Omari, F. Ayad, 2010. The Relationship between P/E Ratio, Dividend Yield Ratio, Size and Stock Returns in Jordanian Companies: A Co-integration Approach, International Research Journal of Finance and Economics, 49: 87-103.
13. Mervyn F. Thurgood, 1972. The Effect of Price Earnings Ratio on Investment Decisions in Trusteed Pension Plans", Ms.C. Thesis, University of British Columbia.
14. Tian Yuehong and ZHENG Jianxin, 2008. Empirical Study on the Main Factors Affecting Price-Earning Ratio of Listed Companies in China, College of Economy and Management, Henan Polytechnic University, P.R.China, pp: 483-486.
15. Raymond, Y.C. Tse, 2002. Price-Earnings Ratios, Dividend Yields and Real Estate Stock Prices, Journal of Real Estate Portfolio Management, 8(2): 107-113.
16. Gojarati, Damoudar, 2011. "Fundamentals of Econometrics", translated by Hamid Abrishami, Publications of University of Tehran. (in persian)
17. Stephen Reich and Vesterfield, Rendolf, 2008. "Modern Financial Management", translated by Ali Jahankhani. (in persian)
18. Brigam, Yujin and Cierhart, Michel, 2008. "Financial Management in Theory and Practice", translated by Ali Parsaeian and Mashhadi Farahani, Termeh Press. (in persian)
19. Abbas Nejad, Hossein, 2001. "Econometrics, Fundamentals and Methods", Publications of University of Tehran.
20. Yuehong Tian, 2011. Research on influencing factors of price-earning ratio of individual stock in China, 2nd International Conference on Management Science and Electronic Commerce (AIMSEC), pp: 561-563.
21. Cheng Hsiao, 2003. Analysis of Panel Data, Second Edition, Cambridge university press.
22. Cheng Hsiao, 2003. Analysis of Panel Data, Second Edition, Cambridge university press.
23. Aflatouni, Abbas; Nikbakht, Leili, 2010. "Application of Econometrics in Accounting Researches", financial management and economics, Termeh Press.