© 2013, World of Researches Publication

Academic Journal of Accounting and Economic Researches

www.worldofresearches.com

Ac. J. Acco. Eco. Res.
Vol. 2, Issue 2, 49-59, 2013

Evaluate the relationship between the Deviation of the Actual Growth Rate of Sustainable Growth Rate and Liquidity Ratios of Listed Companies in Tehran Stock Exchange

Abbas Talebbeydokhti* and Nasser Roshandeli

Department of Accounting, Qeshm Branch, Islamic Azad University, Qeshm, Iran

*Corresponding Author: a_beydokhti @yahoo.com

Abstract: Much of the information that is required for making decision is accounting information1. Obviously, using of accounting information in making decisions without its analysis is not very effective and may even be misleading users. In case by analysis them can provide valuable information to investors and help them in taking rational and informed economy decisions. Among the existing methods in the analysis of financial accounting information there is a special emphasis on financial ratios. Financial ratio analysis as a tool to assess the financial information has been widely in attention and many investors and financial managers referred to above technique to analyze financial statements.

Keywords: Deviation of the Actual Growth Rate, Sustainable Growth Rate, Liquidity Ratios

INTRODUCTION

One of the consequences of accounting evolution is using of financial ratios for analysis and decision making. The emergence of financial ratios back to the late of nineteenth century. Since then, the financial analysts developed and promoted financial ratios. Foundation of financial ratios is based on financial statements and financial statement preparation is based on historical data. Today, the analysis of ratios is a powerful technique and suitable tool for the users in order to understand and assess the performance of past, present and forecast future status of company. Users of financial statements are various groups such as owners, managers, employees, investors, competitors, and researchers and …. Users have different and often conflicting goals and each assess the financial ratios from their perspectives. For example, analysts are looking for predicting future successes while researchers are looking for developing models and applying ratios. Studies

of financial ratios can be divided into several categories although sometimes these divisions are overlapping each other, some of these divisions are[1]:

1. Classification of financial ratios

2. A capability of comparison financial ratios at different industries and the effects of industry on the ratios

3. Bankruptcy prediction models

4. Expression of company's features with financial ratios

5. Ability of forecasting of financial analysis against the financial models

6. Market value of stocks and financial ratios

In each of the above divisions a financial ratio is composed of x and y. Where x and y are figures of financial statements or other financial information. If both figures are obtained from the balance sheet the ratio is called static and if one or both is of profit and loss statement the ratio is called dynamic[2]. The concept of financial ratios can be extend rather than financial statements by using of other sources of information, for example, the items of financial statements and market figures can be combined with each other, financial and market data, and build up the ratio or relationship[3] .

To determine the optimal level of sales growth model can be benefited of a model called sustainable growth model. Using this model, we can calculate the sustainable growth rate[4]. Sustainable growth rate is the highest achievable increase percent in annual sales that the necessary financial resources to support it without need to publish new equity and only can be supplied through debt and retained earnings. Growth rates obtained from this model are compared with actual rates of company that the yield of this comparison shows the status of real growth of the company against the sustainable growth. If the value (deviation of real growth rates of sustainable growth rate) is a positive number it means that the company has grown over the financial and operating power of its organization and is faced with the risk of a liquidity shortage. If the value (deviation of real growth rates of sustainable growth rate) is a negative number means the company has not used of its resources efficiently and effectively and probably will have surplus funds and these funds must be used in a way[5, 6]. Thus it can be concluded that the actual growth rate fluctuations and deviations from the sustainable growth rate can create changes in the company's liquidity rate[7]. Typically, financial analysts to measure a company's liquidity use of Liquidity ratios. Now the question is: whether the deviation of actual growth rate from sustainable growth rate can effect on Liquidity Ratio - as a symbol of the company's liquidity status- or not? Therefore the main research question can be expressed as whether there is a relation between deviation of the actual growth rate from sustainable growth rate and liquidity ratios or not? It means whether the deviation of the actual growth rate from sustained growth rate can be changing the liquidity ratios or not?

Actual growth rate is calculated based on the percentage of annual change in total assets of the company. In other words, a change in asset is a sign of growth.

To measure the growing power of the company must first identify the factors affecting on it. These factors are classified into two groups:

The first group- Variables that are related to the company's operational efficiency:

1. Assets turnover **2.** Profit margin

The second group: Variables that are related to the company's financial **resources strength:**

1. Financial leverage **2.**Profit maintenance ratio

Van Horne (2002) says that if we assume that the retained earnings are only the factor of capital increase, the sustainable growth rate will be:

b= No dividend earnings rate

ROE= Return on Equity

When a business is going to determine its actual growth rate higher than the sustainable growth rate, this model can be used as a planning tool[8].

The expression yield of actual growth rate of the sustainable growth rate is determines the speed of growth. If the result is a negative number this means that companies grow with a slower pace than their standard rate or the speed with which it has operational and financial capacity, in such case the speed of "create" cash is more than its "consume" speed and likely the company will be faced with excess of liquidity[9].

If the value (deviation of real growth rate of sustainable growth rate) is a positive number this means that the company will grow faster than its standard speed. In such cases the cash consumption speed is more than its creation speed and the company will face a liquidity shortage[2].

When the actual growth rate is higher than the sustainable growth rate, to overcome liquidity shortage can be used of one or combination of the following solutions[10]:

1. Increase sales prices or reduce costs is leading to increase profit margin .

2. Reduce paid profits to shareholders.

3. Sale of new shares.

4. Increase in corporate debt.

5. Increase in assets turnover is leading to increase the operating efficiency[11].

But when the actual growth rate is less than the sustainable growth rate means if the resulting value (deviation of actual growth rates of sustainable growth rate) is a negative number the company has surplus cash funds and managers should look for desired opportunities to invest these cash funds7, 9, 11. In this case for optimal use of surplus cash funds can be benefited from the following guidelines[12]:

1. Increase in dividends paid to common shareholders

2. Paying corporate debts

3. Increase in current assets

4. Redeem of company common stock

5. Buy other companies

So the questions associated with this study are as follows:

1. Is there any dependency between actual growth rate deviation from sustainable growth rate and liquidity ratios?

2. Is the dependency positive or negative?

Conceptual and operational definitions of words:

Sustainable growth rate:

Is the maximum growth rate of sales in a business period that can be reached without do any change in fiscal policy (such as increasing or decreasing the debt ratio D / E, increase or decrease dividend or change in the amount of capital), or corrective action in operation part (eg, modification profit margin or assets turnover ratio)[3] .

Actual Growth Rate

Is defined as the percentage increase in sales from one business cycle to another that is determined

During the year. This is the actual growth rate of the company because theoretically it is assumed that the assets of the company is grow parallel to sales growth and at a rate similar to the growth rate of sales and firm size is measured according to its assets. These rates will be calculated in the following way:

Base year sales / (base year sales - sales year 1) = growth rate of sales

Deviation the actual growth rate of sustainable growth rate:

The expression yield of actual growth rate of the sustainable growth rate determines the growth rate of the company.

Dividend payout ratio:

This reflects the company's ability to pay dividends to shareholders.

Stock Exchange: Stock Exchange means a market composed of formal capital that in which buy and sell stocks of companies or securities or private institutions under the rules, specific regulations is done.

Research Domain:

Spatial domain: This research was conducted in Stock Exchange Organization located in Tehran.

Time domain: Financial statements of the aimed companies will be surveyed at range of 2008 to 2011.

Statistical Population: All companies listed in Tehran Stock Exchange for the years 2008 to 2011 are analyzed as having the following:

1. Financial year is ended 20/03.

2. During the mentioned period had to be provided the required financial reports to the Stock Exchange.

3. During the studied period did not have loss?

4. Are not including Investment companies, or financial and credit institutions.

5. Trading interval is not more than thirty days.

6. During the studied period do not have financial year or activity changes.

7. Needed items for the calculation of the variables be available in the studied period?

The reasons for selection companies are listed as follows:

A. There are various companies that are active in various industries.

B. Availability of statistics and data from this company completely.

C. Having minimum institutional conditions, because these companies have been accepted in stock exchange.

Methods of sampling and defining sample size

In this study, Tehran Stock Exchange member firms has selected as the statistical population, that using of exclusion method, the companies are selected as the graphs below:

Description	Number	Number
Number of existing companies in Tehran Stock Exchange by the end of the 2005		432
Number of companies that are involved in stock at the scope of study	125	
Number of companies that have minimize a fiscal year loss	78	
Number of firms that their time period will not end in 20/03	71	
The number of companies which are engaged in investment and financial intermediation activities	5	
Number of firms which their data for calculate were not available or were incomplete variables	19	
Sum		298
Number of companies of statistical population		134

Number of companies of statistical population

Sample size due to the statistical population has been used Cochran's test:

$$n = \frac{NZ^2 \times p \times q}{Ne^2 + z^2 \times p \times q}$$

N: Size of population

N: size of sample

P: Ratio of success

q: Ratio of failure that each value was considered equal p = q = $\frac{1}{2}$

Z: Standard normally distributed variable (1.96)

E: The estimate error was considered e= 0.10.

Therefore, the sample number according to the above formula is:

$$n = \frac{134 \times (1.96)^2 \times 0.5 \times 0.5}{134 \times (0.10)^2 + (1.96)^2 \times 0.5 \times 0.5} = 56$$

Due to the above computations the number of companies of statistical sample is equal to 56 companies. At first these companies are selected among the existing industry of statistical population with respect to the ratio of each industry to total industry and then are selected based on simple sampling of sample.

Methods of data collection

In order to study and it's correctly conclusion, the data play a key role. In this regard, two groups of information are required:

First group: Information that is associated with the principles and literature of research concepts which express the fundamental concepts and framework of research.

Second group: Financial data of listed companies in Tehran Stock Exchange and data needed to calculate the accounting variables from financial statements of the selected companies that is provided by the Stock Organization, software's used in the stock exchange and investment companies and websites linked to the stock exchange have been collected.

Research hypotheses

1. There is a significant relationship between the actual growth rate deviation of sustainable growth rate and the ratio of market value to book value.

2. There is a significant relationship between the actual growth rate deviation of sustainable growth rate and rate of return on assets.

3. There is a significant relationship between the actual growth rate deviation of sustainable growth and the ratio of long-term asset to equity (financial leverage).

Introduction of independent variables and how to measure them:

Rate of return on assets: It can be obtained from net income divided by total assets of the company.

Ratio of market value to book value: Is the market value of equity divided by the book value of the company's shares at the end of each year.

Financial leverage: The ratio of long-term assets to company's equity is used to assess the financial leverage.

Introduction and how to measure the dependent variable:

Deviation of the actual growth rate of sustainable growth rate is the dependent variable in this study.

Actual growth rate: Is the annual percentage change in the total value of corporate assets.

Sustainable growth rate: Is achievable highest percent increase in annual sales that the necessary financial resources to support it can be supplied without the need to publish new equity and only through debt and retained earnings.

To calculate the sustainable growth rate is used of a model called sustainable development model:

Return on Equity (REO) – Ratio of undivided profit SGR= (b)

The general steps are as follows:

1. Collect financial statements of the selected companies from 2008 to 2011

2. Calculate financial ratios of all these companies

3. Calculate the actual growth rate of these companies

4. Calculate sustainable growth rate of these companies in the aimed time range

This study to investigate the relationship between the dependent variable and each of the independent variables has been used of regression analysis and SPSS software, Kolmogorov - Smirnov (KS) test for normality of the residuals and Durbin Watson (DW) test for correlation of residuals are two tests that stability of them, shows to be a reliable indicator of regression test. Results in the form of descriptive statistics and results of hypothesis test are shown in the tables below.

Descriptive Statistics

Table 1 contains descriptive statistics of the tested variables:

Table 1. Descriptive Statistics Data of the research

Variables	Number of observations	Minimum	Maximum	Average	Standard deviation
actual growth rate deviation of sustainable growth	162	-9.30	710	5.54	58.65
Ratio of market value to book value	162	-5.0	11.40	1.69	1.64
Financial Leverage	162	-1.30	4.40	0.397	0.614
Rate of return on assets	162	-0.16	-0.53	-0.088	0.092

The information included in Table 1 express this matter that the average deviation of actual growth rate of sustainable growth rate among the sample companies and during the period under review was equal to 5.54. Also, the average ratio of market value to book value, financial leverage (the ratio of long-term debt to equity) and ROA are respectively 1.69, 0.397, and 0.088. Point to note in this table, is the high distribution of some research variables. The last column of the table that is related to the standard deviation of the research variables is proof for this.

The results of testing hypotheses

First hypothesis: There is a significant relationship between the actual growth rate deviation of sustainable growth and market value to book value.

As shown in the table below, the correlation coefficient between two deviation variables of the actual growth rate of sustainable growth and the ratio of market value to book value is equal 0.417, (r =) 0.417. Due to the calculated significance level according the above table is less than 0/05; the statistical results indicate that there is a significant relationship the deviation between the actual growth rate of sustainable growth rate and the ratio stock market value to book value.

Table 2. Correlation test of the first hypothesis

Variables	Correlation Coefficient	Coefficient of determination	Adjusted coefficient of determination	Significance Level
The ratio of market value to book value	0.47	0.35	0.001	0.002

Also the results of above table suggest that the intensity of relationship between the deviation of the actual growth rate of sustainable growth rate and the ratio of market value to book value is equal to 0/001; means that the 0/001 from changes in the ratio of market value to book value are formulated by the deviation of the actual growth rate of sustainable growth rate and approximately 99% is related to other variables that were not examined in this study.

Second hypothesis: There is a significant relationship between the actual growth rate deviation of sustainable growth rate and return on assets (ROA). As shown in the table below, the correlation coefficient between two deviation variables of the actual growth rate of sustainable growth and return on assets is equal to 0.202 (r =)0.202. Due to the calculated significance level according the above table is less than 0.05 (sig=0.014); the statistical results indicate that there is a significant relationship the deviation between the actual growth rate of sustainable growth rate and the return on assets.
In other words, the research hypothesis is confirmed and the conflicting claim is rejected.
Thus claimed there is significant relationship between the actual growth rate deviation of sustainable growth rate and return on assets.

Table 3. Correlation test of the second hypothesis

Variables	**Correlation Coefficient**	**Coefficient of determination**	**Adjusted coefficient of determination**	**Significance Level**
The rate of return on assets	0.202	0.041	0.034	0.014

Also the results of above table suggest that the intensity of relationship between the deviation of the actual growth rate of sustainable growth rate and return on assets is equal to 0.034; means that the 0.034 from changes in return on assets are formulated by the deviation of the actual growth rate of sustainable

growth rate and approximately 97% is related to other variables that were not examined in this study.

Third hypothesis: There is a significant relationship between the actual growth rate deviation of sustainable growth and the ratio of long-term debts to equity.

The correlation coefficient between two deviation variables of the actual growth rate of sustainable growth and the ratio of long-term debts to equity is equal to 0.126 (r =) 0.126 that shows the middle relationship between two variables. Due to the calculated significance level according the above table is less than 0.05 (.024); the statistical results indicate that there is a significant relationship between the deviation of the actual growth rate of sustainable growth rate and the ratio of long-term debts to equity. In other words, the research hypothesis is confirmed and the conflicting claim is rejected.

Table 4. Correlation test of third hypothesis

Variables	Correlation Coefficient	Coefficient of determination	Adjusted coefficient of determination	Significance Level
The ratio of long-term debts to equity	0.126	0.174	0.168	0.024

Also the results of above table suggest that the intensity of relationship between the deviation of the actual growth rate of sustainable growth rate and the ratio of long-term debts to equity is equal to 0.168; means that the 0.168 from changes the ratio of long-term debts to equity are formulated by the deviation of the actual growth rate of sustainable growth rate and approximately 83% is related to other variables that were not examined in this study. (It should be noted that due to the asymmetry of the data related to financial leverage Kendall's test is used rather than Pearson Correlation Coefficient.)

The results of this research are gathered according to data and the test of hypothesis is as follow:

First hypothesis: Due to the calculated significance level according the table is less than 0/05; the statistical results indicate that there is a significant relationship between the deviation of the actual growth rate of sustainable growth rate and the ratio of market value to book value. In other words, the research hypothesis is confirmed and the conflicting claim is rejected.

Second hypothesis: Due to the calculated significance level according the table is less than 0/05 (sig=0.014); the statistical results indicate that there is a significant relationship between the deviation of the actual growth rate of sustainable growth rate and return on assets. In other words, the research hypothesis is confirmed and the conflicting claim is rejected.

Third hypothesis: Due to the calculated significance level according the above table is less than 0.05 (0.024); the statistical results indicate that there is a significant relationship between the deviation of actual growth rate of sustainable

growth rate and the ratio of long-term debts to equity. In other words, the research hypothesis is confirmed and the conflicting claim is rejected.

RSULTS

Findings related to this research show that there is relationship between deviations of actual growth rate of sustainable growth rate. This relationship is negative and a mean that if the deviation is increased the current ratio is decrease and vice versa. Analysis of second hypothesis of research show that also there is negative relationship between deviation of actual growth rate of sustainable growth rate and prompt ratio. Therefore, the first and second hypothesis of the research is confirmed. By analyzing it was determined that there is no correlation between deviation of price and liquidity of receivable accounts, deviation and inventory turnover and deviation and period of payable accounts. Therefore the hypothesis of third, fourth and fifth of the study are not confirmed.

CONCLUSION

As it is observed in the research, some companies taking to increase sales and faster growth without consider their ability and organizational resources. These companies have positive deviation of actual growth rate of sustainable growth rate. When the deviation of actual growth rate of sustainable growth rate increases, increase of at least maintain of ROA through strong control on operations costs or optimize use of assets of the company associated with taking proper pricing policies, that finally resulted in reduce company's need to foreign cash funds, is the best reaction that the managers can do in coping with this issue that is called "quickly growth". In this case the company may be faced with the shortage of liquidity. In this case the company can be used of one or combination of the following solutions:

1. Publish new equity
2. Get credit
3. Increase profit margin
4. Increase the ratio of profit retain
5. Increase efficiency of operations
6. The use of external growth strategy
7. Sales of sub companies, dependent or divisions
8. Long-term lease of fixed assets rather than buy them

But there is vice versa mode. The case where the real growth rate is less than the sustainable growth rate, this case is the so-called low growth acceleration. In this situation, the company had surplus cash funds and must use these funds in an appropriate and beneficial way. In such circumstances, the options are almost reversed its previous position and are:

1. Increase in dividends paid to common shareholders
2. Paying corporate debts

3. Increase in current assets
4. Redeem of company common stock
5. Buy other companies for growth opportunities

REFRENCES

1. Dastgir, M. (2008). Principles of Financial Management, Noe Pardazan, First volume, pp 31, 32, 33, 92 & 93.
2. Dewet. (2009) "Growth in Sales and Value Creation Terms of the Financial Strategy Matrix». University of Pretoria.
3. Nazari, R., Accounting of joint stock companies. (2009). Publication of auditing organization, pp 75, 76 & 77.
4. Brigham, E.F., Vegapenski, L.C. & Zee Vez, P.R. (2006). Middle financial management, translated by Ali Parsaeian, Termeh publications, P 92.
5. Baghavi Ravi, J. (2006). Financial Management, Vajegane Kherad publications, pp 124, 125 & 132.
6. Rabinz, S. (2006). Organization Theory, translated by Alvani and Danaei Fard, Saffar Publications, pp 399, 400, 401, 402 & 403.
7. Raei, R. & Saeidi, A. (2009). Principles of Financial Engineering and Risk Management, Samt publications, Management college of Tehran, pp 42, 43, 44 & 48.
8. Rahnemaye Roud Pashti, F. (2007). Overview of Financial Management, Jangal publications, pp 281, 282 and 283.
9. Clark, R.J. & Wilson, B. (2001). Strategic Financial Management, translated by Naser Senobar, Forozesh publications, pp 208, 209 and 210.
10. Momeni, M & Azar, A. (2009). Statistics and its application in management, Samt publications, second volume, pp 57, 58, 182, 183 and 184.
11. Yahya Zade Fard, M & Ahmad Pour, A. (2010). Analysis of Financial Statements, Mazandaran University Press, pp 238 and 239.
12. Higgins, R.C. (2010). “Sustainable Growth Rate under Inflation”, Financial Management, 36-40.