International Journal of Management, Accounting and Economics
Vol. 5, No. 4, April, 2018
ISSN 2383-2126 (Online)

www.ijmae.com

Investigation of the Relationship between Accounting Conservatism and Earnings Management Using Benford's Law in Listed Companies of Tehran Stock Exchange

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Abstract

The present study investigates the relationship between accounting conservatism and earnings management using Benford's Law. In this study, the quantitative index of conservatism (cscore) by Khan & Watts (2009) was considered as the accounting conservatism. Target sample includes 363 listed companies in Tehran Stock Exchange during 1999-2015. Divergence between the actual earning and loss frequencies and Benford' distribution has been taken into account. Chi-square and Z-statistic tests, regards to degrees of conservatism were applied. The results revealed that in companies with low or high levels of conservatism, distribution of earning and lose first to fourth digits follow Benford's law. However the distribution of first and second digits of earning, and first to fourth digits of losses differ from the expected distribution when there is an increase in conservatism. Divergence between the third and fourth digits and expected distribution reduced, when conservatism increases.

Keywords: Accounting conservatism, Benford's law, Earnings management.

Cite this article: Foroghi, D., Tahmasbi, M. & Zamani Bakhtiarvand, M. (2018). Investigation of the Relationship between Accounting Conservatism and Earnings Management Using Benford's Law in Listed Companies of Tehran Stock Exchange *International Journal of Management, Accounting and* Economics, 5(4), 244-259.

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Introduction

The primary purpose of financial accounting is providing useful information for investors to predict economic performance. The need to report profits as a primary source for investment decision, executives and analysts have been well documented. Reported earning helps economy in different ways. It provides a basis for calculating the tax and a measure for assessing the success of the company's performance. It also presents a criteria for determining the division of profits and measuring management of the distribution of profits. In addition it helps to manage an economic unit. Because the value of a company is affected by its present and future profits, earning determination is crucial.

Managers often manage profits to mislead shareholders about the company's actual economic performance .The Earnings management which is done through manipulation of real activities and accounting figures, decreases the accuracy of reporting profits. In contrast, it increases the risk and uncertainty of external parties. Moreover it declines information asymmetry and investment efficiency (Mc Nichols and Stubben, 2008).So it's no surprise that various stakeholders assume earning management unfavorable. They try to restrict manager's independence through intensified monitoring. In this regard, conservatism is assumed as a monitoring tool and corporate governance that limits the accrual-based earnings management (Garcia et al., 2012).

Conservatism is the result of asymmetric obligations in identifying the economic benefits and losses in firm financial statements. It leads to prompt detecting and reflecting economic losses in comparison to gains (Basu, 1997). According to previous researches, conservatism leads to limits on the accrual-based earnings management. Guay and Verrecchia (2006) stated that conservatism through prompt detecting losses and delaying identifying economic benefits, decreases the chance of accrual-based earnings management success. This issue is accordance to a broader approach to conservatism suggested by Watts (2003). Watts (2003) stated that one of the important roles of conservatism is limiting manager's opportunistic behavior of financial reporting and also neutralize and eliminate applied-bias in the financial statements and profit-driven by greedy people.

Since the actual earning management and accrual-based earning management can replace one another, some critics claim that strict and stringent monitoring (i.e. high conservatism) leads to inefficiencies in the actual management of corporate governance and increases earning management. Hermalin and Weisbach (2012) argue that strict monitoring motivates managers to act in a way that present themselves more able, while these activities reduce the company's value.

High conservatism on one hand may reduce the accrual-based earning management, but on the other hand it may increase real earnings management. Knowing whether higher conservatism, limits opportunities for earnings management is significant. In this study Benford's law (which has been explained in the following) was applied to check the earning management in the reported profit and loss numbers. The companies listed in Tehran Stock Exchange, Which have imposed varying degrees of conservatism, were surveyed.

For this aim, the article structure was formed. Firstly, the literature would be presented. Then, hypotheses would be assumed. After that research methodology and conceptual model would be discussed. The findings would reported and interpreted in the following section. Finally, the conclusions and recommendations regards to present study would be dedicated.

Research background and research hypotheses

When calculations were done using books, tables of logarithms, mathematician and American astronaut named Simon Newcomb (1881) observed a strange phenomenon. It was obviously observed in that book that an equal number of digits from zero to nine did not repeat. The first pages of the book (which corresponds to the smaller figures 1 and 2) were more used. This meant that the logarithm of numbers starting with the digits 1 and 2 were more investigated in comparison to the numbers starting with the digits 8 and 9 . He further investigated the function of probability of the digits 1 to 9 to the left of a number (i.e. the first digit of a number) is modeled as follows:

$$P(D_1 = d_1) = Log\left(1 + \frac{1}{d_1}\right).\ d_1 = 1,2,3,\dots,9.$$

Newcomb's discovery was soon forgotten. But later, American physicist, Frank Benford (1938) rediscovered it. Benford reviewed this phenomenon in the nature of mortality data collection, baseball rates, newspaper articles and atoms weight in chemical compounds; and confirmed Newcomb's distribution. Benford's law, was named " first digit law". In this law, number 1 as the first digit should be about 30.1% ; 2 about 17.6% and so on around 4.96% (frequency repetition).

first figure shows the expected frequency numbers according to Benford's Law. As this chart shows, there is a steady decrease in the frequency of digits from zero to nine.

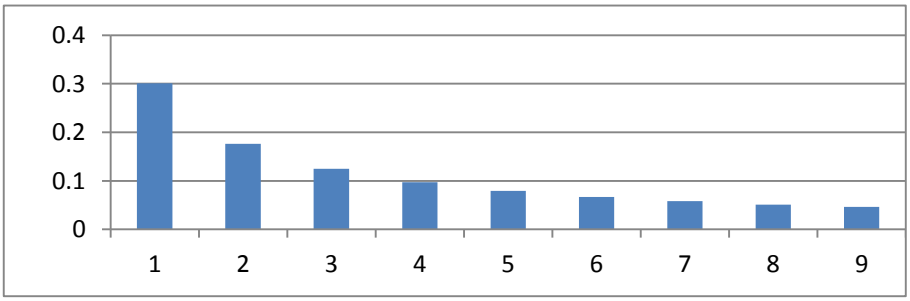

Figure 1: The proportional frequency of each leading digit predicted by Benford's Law.

Pinkham (1961) stated that changes in the measurement units des not impact on the distribution of first digits according to Benford's Law. For example if information about the distance alters from miles to kilometers or financial information alters from dollar to the euro, there will be no change in the distribution of first digits. He called this "Scale Invariance" .Hill (1995) also showed that changes in the numbers (e.g. decimal to binary)

do not change the first digit distribution. He called this "Base invariance". But Benford's Law is not fixed for rounded numbers. If the first digit follows Benford's Law, the next rounded numbers wont follow it.

Rounding numbers disturbs steady decrease in distribution of Benford's law. Earnings management is a kind of profit and loss numbers rounding which can disrupt Benford's probability law of figures. Like other real phenomenon, it is expected that real profit and loss numbers follow Benford's law; otherwise there is the possibility of manipulating the profit or loss figures (Todter, 2009).

Auditors increasingly apply Benford's Law as a tool to detect fraud easily and effectively (Durtschi et al., 2004). Jordan and Stanley (2011) in the United States investigated the Cosmetic earning management before and after Sarbanes-Oxley Act (SOX) using Benford's law. Results revealed that the Cosmetic earning management was common before the implementation of the law. But the existence of this type of earnings management in the period after the law was not approved. Its noteworthy that the information about the companies which the results of their operation led to losses were removed from the study. Nigrini and Miller (2009) presented an auditing analytical method based on Benford's Law .They stated that this kind of analyse is useful to discovering unusual transactions, events and trends. They also added it can recognize such symptoms that the other kinds of analytical auditing procedures are incapable to identify .

Kinnunen and Koskela (2003) in an international survey using data on 22,000 companies in 18 countries, showed That in the period from 1995 to 1999, the profits and losses of companies was combined with Cosmetic earning management. They revealed that the quality of auditing, management bonus plans and some cultural values can help to reduce this kind of earnings management. Their results clarified that the differences in financial accounting purposes and tax incentives, do not have a significant impact on the cosmetic earning management.

According to the above-mentioned descriptions, the present study examines the relationship between accounting conservatism and earnings management using Benford's Law. The purpose is to investigate whether financial reporting based on Benford's Law is occurring at different levels of conservatism; and to identify deviation from the Benford's in companies with low degrees of conservatism in comparison to companies with higher degrees of conservatism. Companies that apply higher degrees of conservatism in accounting procedures, are less likely to enter in earnings management activities. Managers who impose a high level of conservatism in the financial statements, should improve financial statements dependency for corresponding the accounting figures and specifically the net profit with Benford's Law. So according to what was mentioned, five hypothesis were developed as follow:

Hypothesis 1: As conservatism increases, the actual first-digit frequencies of reported earnings will decrease in comparison to expected frequency.

Hypothesis 2: As conservatism increases, the actual second-digit frequencies of reported earnings will decrease in comparison to expected frequency.

Hypothesis 3: As conservatism increases, the actual third-digit frequencies of reported earnings will decrease in comparison to expected frequency.

Hypothesis 4: As conservatism increases, the actual fourth-digit frequencies of reported earnings will decrease in comparison to expected frequency.

Hypothesis 5: As conservatism increases, the actual fifth-digit frequencies of reported earnings will decrease in comparison to expected frequency.

Research methodology

The present study is descriptive. Research method is Correlation/Regression analysis. In term of aim present study is practical. Research population consisted of listed companies in Tehran Stock Exchange during the period from 1999 to 2015. To choose sample, systematic method was used. At first all stock companies were included, then inappropriate companies were removed from the study based on the following conditions:

1)Their Information is available but they are not investment companies and banks.

2)They fiscal year ended by end of this year.

The focus of this study was not the continuous function of companies. Otherwise the company's profit and loss figures reported in each year separately was taken into account. So The companies which enter into or exit from stock Exchange during the period of survey, were included in population survey. With regards to sampling restrictions 363 companies were selected. Information on the sample companies was gathered from Tehran Stock Exchange databases . Profit and loss figures for the first to four numbers performed separately using the Mid function in Microsoft Excel.

The aim of this study was to examine the difference between actual distribution figures of profits and losses and expected frequencies regards to different degrees of conservatism; While this is a significant or random difference. At first Benford's law would be presented based on the mathematical equation and logarithmic distribution. As shown below the probability of first figure P (D1) and the second figure P (D2) is calculated in (1) and (2) equations:

1) $$P(D_1 = d_1) = log_{10}\left(1 + \frac{1}{d_1}\right)$$

$d_1 = 1,2,3,\ldots,9.$

Hill (1995) calculated continuous distribution of digits (the first digit and higher digits) in the equation (3):

3) $$P(d_1, \dots, d_k) = log_{10}(1 + (\sum_{i=1}^{k} d_i 10^{k-j})^{-1}$$

$d_1 = 1,2,3, \dots ,9.$ $d_i = 0,1,2, \dots ,9.$ $j = 1,2,3, \dots ., k.$

Following Stanley and Jordan (2011) in this study chi-square test and Z test have been applied for the determination of net income or loss figures of the companies listed in Tehran Stock Exchange based on Benford's law.

Chi-square test (χ2)

A variety of statistical tests can be applied to check the financial data and Benford's law corresponding Such as Chi-square test (χ2) that indicates a comparison of the expected distribution of all varieties and observed distribution of company' data. Higher-square (χ2) shows that financial data deviated Benford's law. Chi-square (χ2) is a comparison between nP_e (di) and nP_o (di).

4) $$X = \sum_{i=1}^{9} \frac{[nPo(di) - nPe(di)]^2}{nPo(di)} \text{ First digit}$$

5) $$X = \sum_{i=0}^{9} \frac{[nPo(di) - nPe(di)]^2}{nPo(di)} \text{ Other digit}$$

nPe(di) : Expected value of each digit (di)

Pe : Expected frequency:

nPo(di): Observed value of each digit in the study

Po: Observed frequency in the study

n: Total figures

The goal is to test the significance of the difference between the observed frequencies (Po) and expected frequencies according to Benford's law (Pe). Chi-square statistical hypotheses are as follows:

H_0: There is no significant difference between the actual and expected (Benford) frequencies.

H_1:There is significant difference between the actual and expected (Benford) frequencies.

If the observed frequencies of figures be closed to expected values; χ2 would be low and it is a good sign of corresponding. If the observed frequencies of figures be far from expected values; χ2 would be high and corresponding would be weak. A small value of χ2 would be a good sign of not rejecting hypothesis; while a high level of it leads to

rejection. As a result, the critical area will be located on the right side of $\chi 2$ distribution. So:

If $X > \chi^2_{\alpha,df}$ H_0 rejected at a significance level α.

If $X < \chi^2_{\alpha,df}$ H_0 can be accepted at a significance level α.

Based on the requirement to comply with Benford's Law, the test statistic X, degrees of freedom for chi-square distribution is df = m-1 (m: first digit can have a domain from 1 to 9, so m = 9 and the second digit can range from 0 to 9 so m = 10).

Z test

Test z, examines significant difference in the frequencies of the numbers from 0 to 9 . Z-statistic is calculated as shown in equation 6.

6) $$Z = \frac{|P_o - P_e| - \frac{1}{2n}}{\sqrt{\frac{P_o(1-P_o)}{n}}}$$

Po: Observed ratio

Pe : Expected ratio based on the law

N: Number of Views

1 / 2n: Correction factor

In this study, at the beginning the chi-square test ($\chi 2$) was applied to verify that all figures in the financial statements follow Benford's law. If the square be rejected, it shows that the company does not follow Benford's law at all. Then Z test was applied to identify significant frequency difference for each number (from zero to 9) ; also to indicate the number of frequencies of different figures and to see it is more or less than expectation based on Benford's Law. Critical values of the chi-square distribution and Z distribution has shown in Table 1.

Table 1: Critical values of the chi-square and Z Standard

(α)	0.005	0.01	0.05	0.10
Z statistic	2.810	2.570	1.960	1.640
$\chi^2_{\alpha,8}$ statistic (first digit)	21.955	20.09	15.507	13.361
$\chi^2_{\alpha,9}$ statistic (other digits)	23.589	21.666	16.919	14.683

Research Variables

Accounting Conservatism Measurement

According to the Khan and Watts (2009) criteria, changes in the degrees of conservatism is the linear function of specific characteristics such as size, MTB proportion, and financial Vahrm. So Basu model coefficients (1997) are defined in 7 and 8 equations:

7) $\beta_3 = \mu_1 + \mu_2 SIZE_{i,t} + \mu_3 MTB_{i,t} + \mu_4 LEV_{i,t}$

8) $\beta_4 = C - SCORE_{i,t} = \lambda_1 + \lambda_2 SIZE_{i,t} + \lambda_3 MTB_{i,t} + \lambda_4 LEV_{i,t}$

Replacing 7 and 8 equations on Basu (1997) model , firm-year conservatism would be calculated as shown in equation (9):

9) $$Ni = \beta_1 + \beta_2 DR_{i,t} + (\mu_1 + \mu_2 SIZE_{i,t} + \mu_3 MTB_{i,t} + \mu_4 LEV_{i,t}) \times R_{i,t} + (\lambda_1 + \lambda_2 SIZE_{i,t} + \lambda_3 MTB_{i,t} + \lambda_4 LEV_{i,t}) \times DR_{i,t} \times R_{i,t} + \delta_1 SIZE_{i,t} + \delta_2 MTB_{i,t} + \delta_3 LEV_{i,t} + \delta_4 SIZE_{i,t} \times DR_{i,t} + \delta_5 MTB_{i,t} \times DR_{i,t} + \delta_6 LEV_{i,t} \times DR_{i,t} + \varepsilon_{i,t}$$

Variables of equation 9 are defined as follow:

Ni : Net profit

$DR_{i,t}$: For negative yield artificial variable equals to one, otherwise that is zero;

$R_{i,t}$: Yearly return mean t;

$SIZE_{i,t}$: the size of the company, which is the natural logarithm of the market value of equity;

$MTB_{i,t}$: ratio of market value to book value of equity;

$LEV_{i,t}$: Leverage is the ratio of total debt to total equity;

$\varepsilon_{i,t}$: The remaining models

At first coefficients of equation 9 would be estimated through cross-sectional of annual data, then using data from the same commercial year units 7 and 8 will be discussed. Unit 8 represents the level of conservatism of that business unit in year t. And finally, c-score (quantitative index of conservatism) would be calculated for each company per year. Companies would be divided into two groups of low and high levels of conservatism based on the median.The Summary of results of the present study is shown in Table 2.

Table 2: Total numbers of year-firm conservatism at different levels

	low conservatism	High conservatism	Total
Net Profit	1309	1292	2601
Net Lose	224	241	465
Net Profit and Lose	1533	1533	3066

Results

The first and second hypotheses

The first hypothesis states that the difference between the actual frequency of the earnings first digit with the expected frequency (Benford) decreases when conservatism goes high. In Table 3 the actual and expected frequencies of first to fourth figures of companies reported earnings in comparison to Benford distribution has been presented . To examine the overall significance of differences, chi-square statistic calculated for the earnings first digit equals to 828/9 in companies with low conservatism that does not reflects the significance of the differences. In other words, there is no earning management in companies with a low degrees of conservatism. Also, chi-square statistic for the reported earnings first digit equals to 779/18 in companies with high conservatism that does not reflect the significance differences between the observed and expected (Benford) frequencies. Despite the differences are not significant it is noteworthy that with increasing levels of conservatism, some differences have also increased. As conservatism increased, the reported earning first digit management also will increase. So according to the chi-square test of first hypothesis is rejected.

Table 3: Net profit of companies with low and high levels of conservatism

	low conservatism				High Conservatism			
	First digit	Second digit	Third digit	Fourth digit	First digit	Second digit	Third digit	Fourth digit
First group (0 to 2)	47.712	34.239	30.413	30.042	47.412	34.239	30.413	30.042
	-1.647	-0.473	3.200	-0.172	3.139	2.768	0.159	-0.94
	-1.167	0.332	2.421	0.105	2.229	2.08	0.093	0.713
Second group (3 to 6)	36.798	39.469	39.994	40	36.798	39.469	39.994	40
	2.697	-0.661	-3.707	0.641	-3.362	-0.46	-0.134	1.486
	1.967	0.462	2.760	0.444	2.532	0.310	0.069	1.055
Third group (7 to 9)	15.490	26.292	29.593	29.958	15.490	26.292	29.593	29.958
	-1.051	1.133	4.506	-0.469	0.222	-2.375	-0.026	-0.546
	1.043	0.887	0.368	0.342	0.181	1.969	-0.009	0.400
χ^2	9.828	10.673	13.651	6.453	18.779	12.341	6.688	5.608
Observation frequency	1309	1309	1309	1309	1292	1292	1292	1292

Note: The first number in each cell of the table, indicates the expected figure based on Benford's law in percentage. The second number of each cell shows the difference

between the actual and expected figure based on Benford's Law in terms of the percentage. The final numbers of each cell, illustrate the significant difference of actual and expected frequencies in each group (statistic z).

Table 3 shows that the second group of digits (numbers 3 to 6) as the reported earnings first digit are 697/2 percent more than expected (Benford) frequency in the companies with lower rate of conservatism. In addition the first group (numbers zero to 2) and the third group (numbers 7 to 9) of figures as the reported earnings first digit of these companies show 647/1 and 051/1 percent respectively less frequency than the expected (Benford) one. It is important that for each Z test the observed frequency in all three groups had no significant differences with the expected frequency, because the statistics for all three groups are not in critical area. he results also revealed that the second group (numbers 3 to 6) as the reported earnings first digit show a rate of 362/3% lower frequency in comparison to expected frequency in companies with high conservatism . The first and third groups also have more of than the expected frequency. But according to the standard z test, all three groups are not significantly different from expected. With the increasing conservatism, regardless of the make-up of numbers to different groups, there was a difference from 697/2 percent to 362/3 percent.

Figures 2 and 3 compared the actual frequency of the first digit earnings with the expected frequency (Benford) at different levels of conservatism. As the figures indicate, apparently by increasing conservatism, the differences increased.

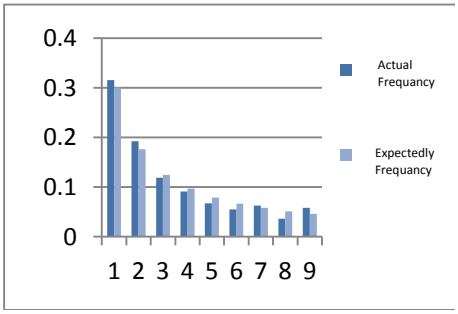

Figure 3: The actual and expected frequency numbers of 1 to 9 for the first digit gains in firms with high levels of conservatism

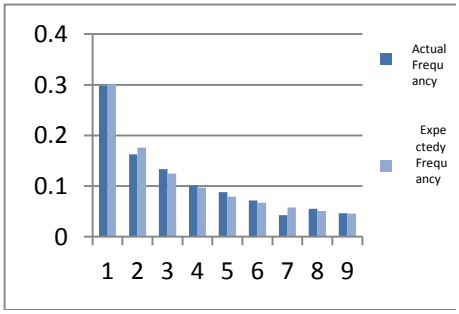

Figure 2: The actual and expected frequency numbers of 1 to 9 for the first digit gains in firms with low conservatism

With a similar analysis for the second digit, it can be said that the second hypothesis (with increasing levels of conservatism, a difference between the frequency of actual and expected earning second digit decreases) also rejected. Because the chi-square statistic of the reported earnings second rigid heightened from 673/10 to 341/12. In addition, the differences between the third group as the second earning digit increased from 133/1 to 375/2 which confirms chi-square test. Finally, based on standard z-test, the differences for all three groups at different levels of conservatism, is not significant.

Figures 4 and 5 compare the actual and expected frequency (Benford) of the reported earnings second digit compared in different levels of conservatism. As the bars indicate, apparently by increasing conservatism, the differences increased.

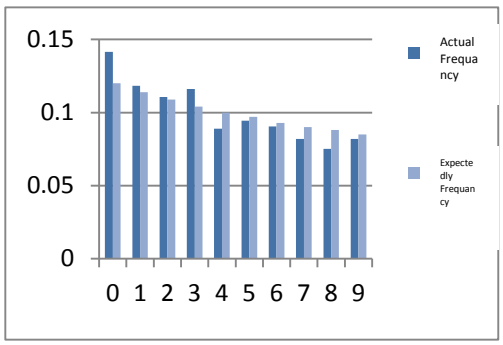

Figure 5: The actual and expected frequency numbers from 0 to 9 for the second digit gains in firms with high levels of conservatism

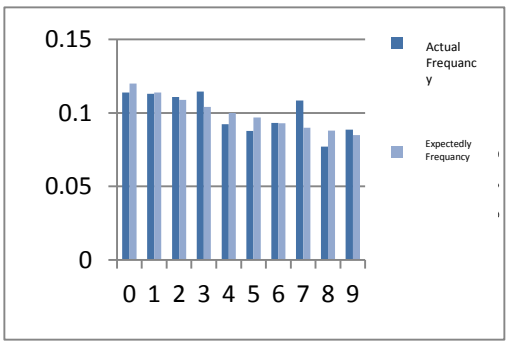

Figure 4: The actual and expected frequency numbers from 0 to 9 for the second digit gains in firms with low conservatism

The third and fourth hypotheses

The results in table 3 revealed that an increase in the levels of conservatism leads to dropped in third number chi-square statistic company's reported earning. In other words, with increasing levels of conservatism, the management of the third digit of earning declined. There was not a significant difference between the observed and expected frequency of each group according to standard z; however with increasing levels of conservatism the difference among three groups declined. So the third hypothesis was accepted at the confidence level of 99%.

Figures 6 and 7 compared the actual and expected (Benford) frequency of the earning third digit at different levels of conservatism.As the figures indicate, apparently by increasing conservatism, the differences diminished.

Results in Table 3 show that the manipulation (management) in the earning fourth digit decreases when conservatism level increases. The fourth hypothesis with similar analysis at a confidence level of 99% was accepted. Figures 8 and 9 compares the actual and expected (Benford) frequencies of the earning fourth digit at different levels of conservatism. As the figures illustrate, apparently by increasing conservatism, the differences diminished.

International Journal of Management, Accounting and Economics
Vol. 5, No. 4, April, 2018
ISSN 2383-2126 (Online)

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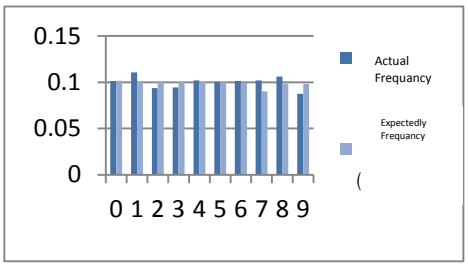

Figure 7: The actual and expected frequency numbers from 0 to 9 for the third digit gains in firms with high levels of conservatism

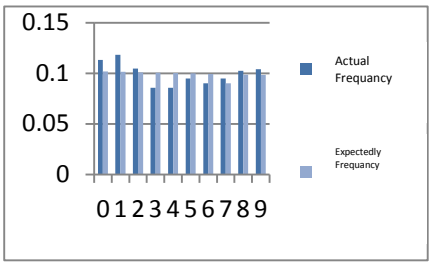

Figure 6: The actual and expected frequency numbers from 0 to 9 for the third digit gains in firms with low conservatism

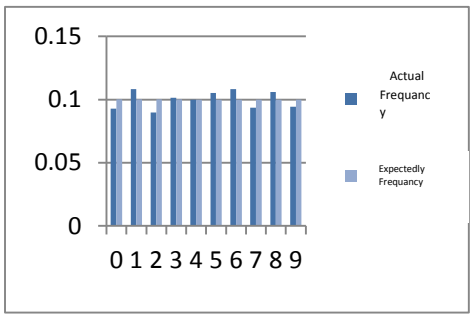

Figure 9: The actual and expected frequency numbers from 0 to 9 for the fourth digit gains in firms with high levels of conservatism

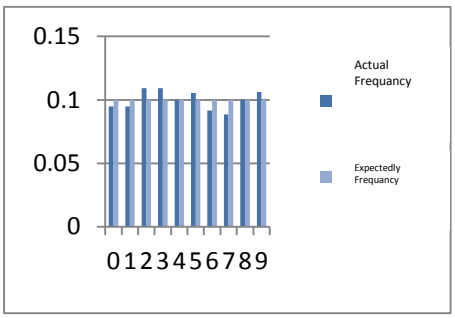

Figure 8: The actual and expected frequency numbers from 0 to 9 for the fourth digit gains in firms with low conservatism

Fifth hypothesis testing

Fifth hypothesis states that the difference between the actual and expected frequencies of the first to fourth digits of reported loss decreases when there is an increase in degrees of conservatism.

Table 4 illustrates the difference between the actual and expected (Benford) frequencies of the first to fourth digits in the reported losses. As this table reveals, the distribution of loss data of all companies with low and high conservatism generally follow Benford's law. Moreover Square-chi statistics for all figures (first to fourth) did not show a significant difference between the real and expected frequancies. It is noteworthy that with increasing levels of conservatism, the chi-square statistic (which represents the difference between the observed and expected frequencies) is increased.The results of the standard z-test confirms chi-square test. Therefore Fifth hypothesis of this study was rejected.

Table 4: Net losses for companies with low and high levels of conservatism

	Low Conservatism	High Conservatism

	First digit	Second digit	Third digit	Fourth digit	First digit	Second digit	Third digit	Fourth digit
First group (0 to 2)	47.712	34.239	30.413	30.042	47.712	34.239	30.413	30.042
	2.734	-3.436	-4.521	0.761	-2.484	-0.214	3.197	0.663
	0.751	1.041	1.468	0.174	0.710	0.002	0.982	0.153
Second group (3 to 6)	36.798	39.469	39.994	40	36.798	39.469	39.994	40
	-1.977	-3.755	2.416	-0.715	0.546	-5.03	4.404	1.493
	0.550	1.103	.0664	.0150	.0108	1.575	1.311	.0405
Third group (7 to 9)	15.490	26.292	29.593	29.958	15.490	26.292	29.593	29.958
	-0.758	7.190	2.103	-0.048	1.937	5.243	-7.602	-2.157
	0.225	2.209	0.604	-0.057	0.707	1.682	2.771	0.675
χ^2	9.148	8.603	10.032	1.526	13.866	17.388	10.051	4.678
Observation frequency	224	224	224	224	241	241	241	241

Note: The first number in each cell of the table shows the expected portion of Benford's law in percentage . The second number of each cell indicates the difference between the actual and expected Benford's Law in percentage. The final numbers of each cell shows the significant difference between the actual and expected frequencies (statistic z) in each group.The figures 10 and 11 compare the actual and expected(Benford) first digit frequencies of reported losses at various levels of conservatism (Due to the high number, the figures related to other digits were not presented). As the bars shows, apparently by increasing conservatism, the differences have also increased.

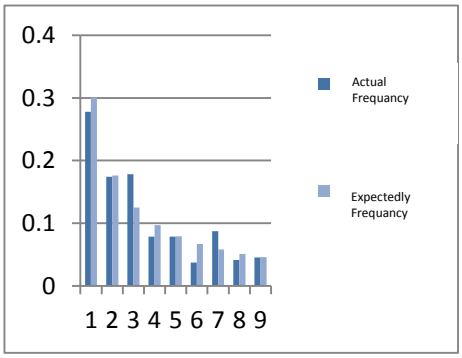

Figure 11: Actual and expected frequency numbers 1 to 9 for the first digit losses in companies with a high level of conservatism.

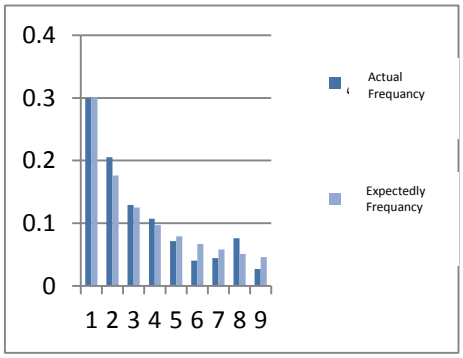

Figure 10: Actual and expected frequency numbers 1 to 9 for the first digit losses in companies with low levels of conservatism.

Conclusion and Recommendations

In the present research the relationship between conservatism and earnings management was evaluated using Benford's Law. Results of first and second hypothesis

showed that by increasing the levels of the conservatism, the difference between the first and second earning digits frequencies and their expected distribution increases. In other words, increasing conservatism leads to reduced earnings management Such reduction in earning management should be presented in a format of not following Benford's law. Therefore, there is a negative relationship between conservatism and earnings management. This result is accordance with results of Demski (2004), Ewert and Wagenhofer (2005) and Hermalin and Weisbach (2012). Also with increasing levels of conservatism, the difference between the third and fourth earning digits and their expected distribution reduced. It means despite the higher supervision through conservatism it is possible that managers manipulate earnings figures of the third and fourth digits. It may be argued that the third and fourth earning digits compared to the first and second earning digits are less important As a result, their manipulation with higher conservatism is not unexpected. The results (positive relationship between conservatism and earnings management) are in line with the results of Cohen et al (2008), Zhang (2012) and Garcia et al (2012). The results of the fifth hypothesis of this study indicated a positive relationship between conservatism and first to fourth digits.

Management of companies reported losses are consistent with the results of Cohen et al (2008) According to the results, the investors are suggested to investigate the earnings management, they should consider the company's conservatism. Regardless of the level of conservatism in the company, the uncertainty about the current profit or loss figures that can help investors predict future stock returns and profits increase.By doing any research opens the way towards new directions and requires further research is continuing. So, researches are proposed as follow:

1. Review the relationship between conservatism and earnings management in different industries using Benford's Law

2. Inestigating relationship between earnings management and audit quality using Benford's Law.

3. Investigating relationship between earnings management and earnings quality using Benford's Law.

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