

EFFECT OF INFORMATION TECHNOLOGY ON THE RELIABILITY OF ACCOUNTING INFORMATION

Abolfazl Ghadiri Moghaddam¹, Fatemeh Yazdanpanah^{2*}, Mahsa Salari², Hamed Seyed Rahimzade², Iman Faryadi Shadmehri² and Seyed Mahdi Razavi²

1- Department of Accounting, Mashhad Branch, Islamic Azad University, Mashhad, Iran

2- M.A Student, Department of Accounting, Mashhad Branch, Islamic Azad University, Mashhad, Iran

ABSTRACT: Effect of information technology on the reliability of accounting information was examined in the present study. The main aim of this study was investigating the effect of information technology on the reliability of accounting information. The criterion of absolute value of discretionary accruals was used to measure the reliability of accounting information. Research hypothesis was tested using regression model and two independents samples t-test. The results showed that applying information technology declined the reliability of accounting information.

KEYWORDS: Information Technology, Reliability of Accounting Information, Discretionary Accruals.

INTRODUCTION

Nowadays, the world is rapidly converting to an information society. Accessing and utilizing knowledge and information have a main and determinative role such society. Furthermore, the extended evolution and advancements occurring in the range of trading activities, production, and business dealings of different economic units intensified the need for preparation and presentation of relevant and reliable financial information by economic units. Today, failure to use new information technology to analyze and process data and achieve more accurate judgments means depriving decision-makers from the sources that are easily accessible and improve their decisions. Thus, we hope that can utilize information technology to promote the quality of accounting processes and financial reporting and improve the qualitative characteristics of accounting information.

1.1. Recitation

Based on theoretical concepts in financial reporting, qualitative characteristics refer to the characteristics that make the information provided in the financial statements of the users helpful for assessing the financial position, financial performance and financial flexibility of the business unit. The qualitative characteristics related to the information content included "reliability" and "relevance" characteristics. The main qualitative characteristics related to the information presentation included "comparability" and "understandability" characteristics.

Financial information cannot simultaneously have these qualities in higher levels regarding the qualitative characteristics of financial information; particularly the two qualitative characteristics of reliability and relevance are on contrary. Consequently, reasonable balance between qualitative characteristics of financial information should be established. The feature of information reliability is usually emphasized in the basic financial statements to and the feature of information relevance is less emphasized due to the importance of information reliability.

In this paper, we deal with this issue that whether the use of information technology is effective on the reliability of accounting information or not? In fact, the main aim of this study is investigating the effect of information technology on the qualitative characteristic of the reliability of financial information and financial reporting quality.

THEORETICAL BASIS

2.1. The need for a new model of reporting

In recent years, a growing conflict between traditional models of accounting, auditing and user expectations emerged due to easy accessing to information resulting from applying information technology. Accounting standard-makers emphasized on the purity of the reporting process through increased reliability of the information. Information technology led the expectations of the users to access to the comprehensive data rather than standard reports and aggregation in financial reporting. As a result, the dissatisfaction of the users is

increasing from the relevance of financial information ([Arab Mazar Yazdi, 2003](#)). Accordingly, we conclude that the periodic financial reporting model should turn into online continuous financial reporting model.

2.2. Financial reporting on the internet and continuous reporting

Internet provides new opportunities for financial reporting, some of these advantages are: increased frequency and amount of financial and non-financial disclosure, possibility of quick information dissemination in a completely unrestricted circulation, take advantage of relevant texts in hypertext environments, much wider group of users accessing to the same information without discrimination, receiving a quick response from users and audiences of generated information and providing voice and video communication with text ([Saghafi et al. 2005](#)).

User's information needs are diverse and changing. A new approach should be taken, in which the users could emphasize on satisfying the user's information requirements. Such an approach requires the use of a more flexible reporting system, i.e., what the current model of financial reporting for public purposes does not have. Internet can play an important role in reporting some special cases and adaption of financial reporting and the user's requirements. ([Saghafi et al. 2005](#)).

Using high-level information technology means using the Internet in relation to financial reporting. As such, the Company's consolidated financial system is directly connected to the Internet and the users of accounting information can visit the company website from anywhere in the world and observe and analyze the financial statements with the last changes at any moment. The users can even manipulate their own version for their required report using intelligent software, the Hyper Text Markup Language (HTML), the Extensible Markup Language (XML), Extensible Business Reporting Language (XBRL) and other effective technologies. Thus, there is no need to print and distribute quarterly financial statements by the end of the financial year. This type of financial reporting, in which the information is available via the Internet or its successor at all times, is known as an online (continuous) financial reporting ([Etemadi et al. 2006](#)).

LITERATURE

[Hassan Aghaii et al. \(2004\)](#) conducted a research titled "investigating effect of Information Technology (IT) on qualitative characteristics of accounting information". The

results showed that Information Technology increased relevancy and decreased reliability of accounting information.

[Asadian Oghani et al. \(2008\)](#) conducted a research titled "Effect of web-based financial reporting on the qualitative characteristics of accounting information". The results showed that Web-based financial reporting increased the relevance of accounting information and reduced the reliability of accounting information.

[Khan, \(2002\)](#) conducted a research titled "Internet financial reporting: future prospects". His research result indicated that the use of the Internet for electronic financial reporting reduced the reliability of financial information.

A study was conducted titled "The Impact of Implementing Enterprise Resource Planning Systems (ERP) on the usefulness of accounting information" by [Brazel and Dang, \(2005\)](#). The results confirmed that implementing enterprise resource planning systems increased the relevance of accounting information and decreased reliability of accounting information.

RESEARCH HYPOTHESIS

The research hypothesis is formulated as follows based on a theoretical basis and according to the findings of previous research:

Hypothesis: the use of information technology has an impact on the reliability of accounting information.

RESEARCH METHOD

This research type is inductive in terms of inference and is cross correlation in terms of hypothesis testing models. On the other hand, it is an event-mining study type of post-event. Research hypotheses were tested using regression model and two independent samples t-test and SPSS software.

5.1. Statistical population and sample

Statistical population included stock companies that have attempted to use new accounting software. Sample included those firms that had the following qualifications:

1. The companies that attempted to install and implement new accounting software in 2002.
2. Company Information existed at the databases from 2006 to 2012.

5.2. Hypothesis testing model and research variables

In this research, reliable accounting information is measured using the absolute value of discretionary accruals. Larger values show lower reliability of accounting data. The discretionary accruals estimate using the

modified Jones model and cross-sectional to do so the total liabilities or total accruals required to be measured.

Total accruals (TAC): is calculated as the difference between profit before extraordinary items EBIT and net cash flow from operating activities. The following equation is used for each firm in each year.

$$TAC_{i,t} = \alpha_{1t} \left(\frac{1}{TA_{i,t-1}} \right) + \alpha_{2t} \left(\frac{\Delta Rev_{i,t} - \Delta AR_{i,t}}{TA_{i,t-1}} \right) + \alpha_{3t} \frac{PPE_{i,t}}{TA_{i,t-1}} + \epsilon_{it} \quad (1)$$

Where,

TAC_{i,t}= Total accruals of firm i in the year T
 TA_{i,t-1}= first-period total assets of firm I in the t year or t e final total assets of firm I in t-1 year.

ΔRev_{i,t}= Changes in sales revenue of firm I during the years t and t-1

ΔAR_{i,t} = Change in accounts and receivable notes of company i during the years t and t-1

PPE_{i,t} = net tangible fixed assets of company i in the year t

Non-Discretionary Accruals computed based on values fitted from Equation 1. Discretionary accruals (DA), considered as a reliable measure of accounting information, are the absolute value of the residuals are given by Equation 1.

The following regression model was used to show that whether the reliability level of accounting information changed before or after installing and implementing new accounting software or not, and the data related to three years before and three years after the installing and implementing new accounting software was used to analyze the model.

$$ABSDA = \beta_0 + \beta_1 AFT + \beta_2 IMPYR + \beta_3 LGTA + \beta_4 LEV + \beta_5 MTB + \beta_6 OCF + \epsilon$$

The dependent variable ABSDA is the absolute value of discretionary accruals estimated from the Jones cross-sectional area model and its value equaled to |ε_{it}| in Equation 1 per year.

AFT is the main independent variable which is a dummy variable. This variable with the value of zero and one indicates the use or non- use of new accounting software.

IMPYR is another dummy variable which with the two values of zero and one indicates information environment or range of information during the application of information technology.

LGTA= is the size of the company that is measured by the logarithm of total assets end of the period.

LEV= is the leverage ratio obtained from dividing the sum of end of period debt by the total assets of the company end of period.

MTB= is the ratio of market value to book value

OCF= Net cash flow from operating activities or net operating cash flows of the company.

5.3. Regression model analysis of the first hypothesis

Table 1: Variance Analysis Table

Determination coefficient	Adjusted coefficient of determination	F test statistic	p-value
0.387	0.364	17.053	<0.001

Significant regression model is confirmed in terms of the values of the coefficient of determination and the adjusted coefficient of determination that are equal to 0.387 and 0.364, respectively, and the value of F statistics and corresponding p-value.

Table 2: Regression coefficient

Regression coefficient	β i value	t test statistic	p-value
β 0	-489645	-6.646	<0.001
β 1	-8683.926	0.453	0.651
β 2	8893.95	0.472	0.637
β 3	108481	8.638	<0.001
β 4	-38077.1	-1.685	0.094
β 5	-3494.429	-1.619	0.107
β 6	-0.192	-2.586	0.011

Only the fixed value and LGTA and OCF variables are necessary in the model at the significant level of 0.05 between all the variables and other variables are removed. Generally, normality of data was not confirmed in the regression model. Thus, it can be concluded that the fitted regression model is not very reliable. The two independent samples t-test was used for investigating the effect of applying information technology on the reliability of accounting information because the fitted regression model was not reliable.

5.4. Independent two-sample t-test to compare the mean values of absolute discretionary accruals before and after applying information technology

Table 3: Independent two-sample t-test results

Group	Sample volume	Mean	SD	t-test statistic	p-value	certainties interval95%	
						Upper bound	Lower bound
Before	75	50985.21	68841.40	-2.695	0.008	-11516.6	-74802.4
After	71	94144.72	136184.38				

Consequently, the null hypothesis is rejected at a significance level of 0.05 in terms of the p-value result. That is, the application of new accounting software affected absolute value of discretionary accruals. The mean absolute value of discretionary accruals was 50985.21 before applying new accounting software during 2006 to 2008. But it was increased to 94144.72 after applying new accounting software during 2010 to 2012. Thus, it can be concluded that applying new accounting software increases the absolute value of discretionary accruals. Increasing the absolute value of discretionary accruals means decreasing the reliability of accounting information.

CONCLUSION

Based on the results, the application of information technology has a negative reverse effect on the reliability of accounting information. In other words, the application of information technology decreases the reliability levels of accounting information. It is expected that information technology increases the quality of financial reporting. Because it is expected that not only more relevant information presents, but also the reliability of information increases by applying information technology. In other words, the final financial reporting should move toward on line or continuous financial reporting regarding the information requirements of users. Thus, the accounting system is supposed to synchronize accounting profession with information technology developments. Although, financial reporting and accounting profession loss its position and importance in near future.

REFERENCES

- Arab Mazar Yazdi M. Changes of Accounting Visage in the Era of Information Technology Dominance. *Accounter* 2003;170:23.
- Asadian Oghani A, Karbasi Yazdi H, Heidarpour F. Investigating the Effect of Online Financial Reporting on the Qualitative Characteristics of Accounting Information. Islamic Azad University, Tehran-Markaz 2008.
- Brazel JF, Dang L. The Effect of ERP System Implementations on the Usefulness of Accounting Information. International Meeting of the American Accounting Association, Washington 2005.
- Etemadi H, Elahi SH, Hassan Aghaii K. Investigating the Effect of Information Technology on Qualitative Characteristics of Accounting Information. *Accounting and auditing surveys* 2006;4:216.
- Hassan Aghaii K, Etemadi H, Elahi SH. Investigating the Effect of Information

Technology (IT) on Qualitative Characteristics of Accounting Information. Master's thesis, Tarbiat Modares University, Human Science Collage 2004.

- Khan T. Internet Financial Reporting: ahead of its time. *Australian CPA* 2002;72(9):74.
- Saghafi A, Arab Mazar Yazdi M, Baghomian R. Financial Reporting on the Internet and its Status in Iran. *Accounting studies* 2005;10: 11.