Measuring Earnings Quality in Saudi Arabia Insurance Companies

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Abstract:

Earnings Quality represents the declared earnings capacity in expressing the true performance of the economic unit in addition to the continuity of earnings for the coming periods, as well as its current ability to predict future earnings. As a result of the importance of this accounting tool in measuring the results of the operational performance of economic units, the two researchers proposed a number of quantitative models aiming to measure earnings quality in insurance companies. The researchers developed some models used in earlier studies by introducing some variables into the model that would increase the explanatory capacity of the model. The study found that the proposed model is capable of measuring earnings quality in insurance companies in addition to its ability to accurately predict future earnings. The proposed classification of insurance companies in the Kingdom of Saudi Arabia according to the level of earnings quality has been achieved through the application of this model. The study also recommended the adoption and the use of the continuity model in the realization of earnings and forecasting to detect earnings quality in cooperative insurance companies.

Keywords: Earnings quality, continuity of earnings, accruals quality, discretionary accruals, cooperative insurance companies

INTRODUCTION

The quality of earnings contributes to increasing investment efficiency and borrowing and thus helping users of financial statements to evaluate performance of the economic units and make rational decisions to use available economic resources. Earnings quality, therefore, is a good indicator of operational performance and a good measure of the value of economic unity (Lo,k.,2008-Afaanz,2005- Demerjian et. al., 2013); as a result, interest in measuring earnings quality increased after the collapse and bankruptcy of several giants, including Enron, an American energy company as its shareholders lost at least $ 25 billion, as well as Goldcom, an American telecommunication company, and Xerox. Some of the world's largest banks also went bankrupt because of the board's ability to manipulate accounting records and present fraudulent financial statements. As a result, major international and local insurance companies, including third-country insurance companies were deeply affected.

When talking about causes of crises, the causes of these crises are to be found in the lack of accuracy, reliability (precision), and honesty of published financial information, and earnings in particular. Earnings are so important element in evaluating the performance of the economic unit and determining its fair value and future expectations. The continuity of earnings model (recurring continuity of earnings) was used as a measure of earnings quality as the continuity of earnings indicates the link duration between the current earnings and future earnings and the extent to which this reflects future earnings forecasting (Altamuro and Beatty,2006). Earnings consist of operating cash flows and future accruals; they will subsequently become cash flows. Earnings quality is more concerned with continuing cash flows than accruals, where accruals are more vulnerable to manipulative management. The lower the accruals are, the higher the quality of earnings (Richardson, et.al. 2005).

On the same subject, a study has indicated that earnings management leads to the erroneous valuation of stocks traded on the equity market. The management of the economic unit sometimes uses the flexibility of the accounting standards in its favor and allows intentional intervention on its part in an attempt to influence declared earnings, where the accrual model was used to demonstrate the relationship of earnings management and the quality of published earnings (Lo, K., 2008).

In light of the above and in light of the actual facts and the reality of the situation on the ground, the research problem is arising from an attempt to measure earnings quality declared in the cooperative insurance companies in the Kingdom of Saudi Arabia by answering the following questions:

- Are the declared earnings in those companies containing large discretionary accruals in an attempt

to influence the quality of earnings and as a sign of earnings management?

- Are the earnings declared in these companies can be used to achieve continuity of earnings or maintain earnings in the long term?

- Are the earnings declared in these companies reliable in predicting future earnings?

Scientifically, the research is important because of the growing interest in cooperative insurance companies in the Kingdom as an engine of the national economy. As a result, it was necessary to measure the quality of declared and published earnings in their financial statements. This study represents a modest attempt in this field, despite the scarcity of Arab research which, as far as the authors know, was applied in practice to the data of the cooperative insurance companies. After reviewing extensive research on the subject, the researchers reached this conclusion. This study, therefore, is a practical and academic addition in an attempt to fill the gap in this important and vital area.

1. Practical Significance

   The practical significance of this study is as follows:

   A. The study is an indicator to assist investors and users of financial statements in making key decisions about the quality of declared earnings.

   B. The study is an indicator of the performance evaluation of cooperative insurance companies towards the continuity of earnings.

   C. The study is an indicator of the Capital Market Authority of Saudi Arabia to identify the earnings of cooperative insurance companies.

   D. The study is trying to develop a proposed model for measuring earnings quality and applying it to cooperative insurance companies.

Research Objectives:

In light of the above-mentioned presentation, the study aims to present and analyze the most important studies that dealt with earnings quality related to the subject of the study as well as to analyze the concept and dimensions of earnings quality in contemporary accounting thought. The study also aims to set out and apply a proposed model for measuring earnings quality to the sector of cooperative insurance companies in the Kingdom of Saudi Arabia in order to arrive at the results of the applied model on the continuity of earnings and forecasting and disclosure of earnings management.

METHODOLOGY OF THE STUDY

The methodology of the study will combine several research approaches to serve the scientific and practical aspects in order to achieve complementarity between them to achieve the objective of the study. The following research methods will be followed as needed:

1. Inductive Approach: The research and studies related to the problem in question are extrapolated and

reviewed, whether it relates to earnings quality concept or the criteria used in measuring quality in order to build the proposed model.

2. Content Analysis Method: It will analyze ideas, relationships, entrances, and practical and scientific aspects that will be included in the research and studies that will be extrapolated to serve the objectives of the research.

3. The applied approach: Some variables that are applicable through the proposed model will be added to the data of the financial statements published in the cooperative insurance companies.

Research hypotheses

The following assumptions are made regarding this study in order to achieve the study objectives:

1. There is no statistically significant effect between continuity and predictability of future earnings and earnings quality.

2. There is no statistically significant relationship between the management and quality of earnings.

3. There is no significant effect between discretionary accruals variables to detect earnings management and earnings quality.

Research Limitations

The limits of this study are:

   A. The study will not be exposed to the concept and dimensions of earnings management or its motives because it is beyond the scope of this study.

   B. Restricting the study to insurance companies listed on the stock market, in which published data and financial statements are available.

Study Plan:

The rest of this study is organized as follows:

Topic 1: Presentation and analysis of the most important previous studies in the field of study.

Topic 2: Rooting the concept, the importance and dimensions of earnings quality.

Topic 3: Developing the proposed model for measuring earnings quality.

Topic 4: Translation the research into practical application and its results.

Topic 5: Conclusions and recommendations.

Finally: Reference List.

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An analysis of the subject trends

Based on the importance of an extrapolation of the accounting trends that dealt with the subject of earnings quality, the researchers in this section will review the studies that were carried out on this topic in terms of the importance, concept, and methods of measurement. The following figure (1) reflects the researchers' view of the classification of trends in this subject.
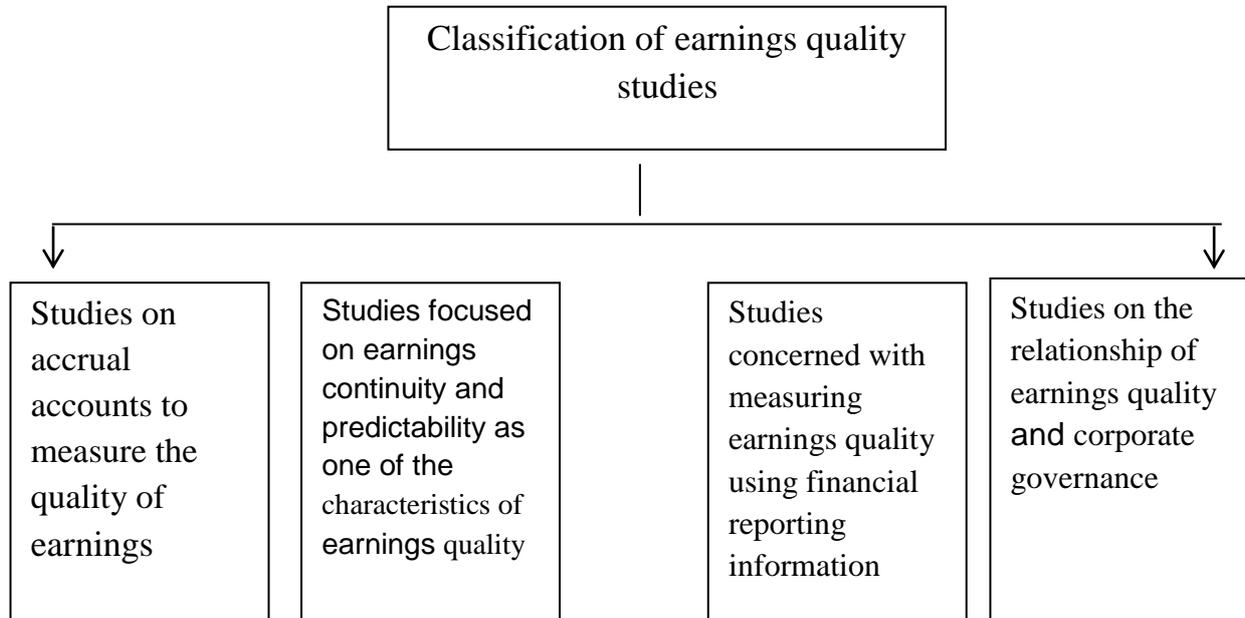

Figure 1: shows the researchers' vision in the classification of earnings quality studies
Source: Prepared by the researchers

First: Studies on accrual accounts in measuring the quality and management of earnings

Several studies dealt with measuring earnings quality through earnings management measures. The researchers will analyze some of these important studies as follows:

Dechowet.al 1995 aimed at evaluating the models used to measure discretionary accruals to detect earnings management practices to reflect earnings quality reported in the financial statements. This study used several models, including Healy model (1985), DeAngelo model (1986), Jones model (1991), the industry model, modified Jones model (1995). The study found that Modified Jones Model (1995) is the most able model to detect earnings management and thus earnings quality.

Kim et.al., 2003 examined the impact of firm size on earnings management. The study used many companies from 1983 to 2000, and the study found that small companies exercise earnings management to avoid reporting losses. Large and medium-sized companies exercise earnings management more to avoid reporting the decline in earnings.

Norman and Kamran (2005) relied on the examination of discretionary accruals in Malaysian companies with financial crises. The study used a sample of 153 companies during the period 1994 – 2000. It founds that the companies with financial crises practice earnings management where the number of discretionary accruals was found to be positive, indicating a decline in earnings quality.

Sun and Rath 2009 used discretionary accruals to detect the management and earnings quality in Australian companies. The study found a strong impact for both firm size and return on assets for corporate earnings management practices and their impact on low earnings quality. The study found an impact of the sector type to which the companies belong on earnings quality.

Second: Studies concerned with the continuity of earnings and predictability as a quality characteristic

Several studies have shown that earnings quality increases as current earnings have continuity in the future, which means that current earnings are a good indicator of future earnings (Francis, et.al., 2004- Chinch et al. ., 2010-Chalmers, et.al., 2011, Saber, Abulaila, 2016- Abulaila and Alhathlool, 2016- Ezat, 2019-Bekheet et al., 2019).

Penman (2003) has confirmed that high-quality earnings are earnings with a good index of future earnings. The study uses a predictive index of future earnings as one of the characteristics of earnings quality.

Third: Studies concerned with measuring Earnings quality using financial reporting information.

Francis et al., 2005 examined seven characteristics of earnings quality, namely: quality, continuity, predictability, income smoothing, appropriate value, timeliness, and conservatism. Accounting characteristics are more consistent in measuring the quality of financial information.

Lee and Yue, 2004 used the characteristics of financial information in measuring earnings quality based on accounting data. The study used the discretionary accruals as part of the measurement of credibility and predicting future earnings, and testing whether measuring the quality of earnings reflects the useful decisions to investors. The study found similar results in measuring continuity of earnings as a measure of earnings quality.

Clikeman, 2003 presented theoretical contributions to measure earnings quality as a reflection financial reporting quality. The study mentioned that the principle of interviewing is an important principle in measuring continuity of earnings and that the industrial enterprises achieve revenues through their financial assets. Express the economic truth of the firm 's activities. The study found that the current reports do not reflect the economic reality of the firm 's activities.

Schipper and Vincent, 2003 used a quantitative model to measure the quality of earnings based on the operating cash flow statement. The reason for using this list in the model is that it excludes the adverse effect of the accrual basis and the consequent personal judgments. The study found that the quality of earnings increases as estimates and judgments decrease and consequently financial reporting quality increases.

Fourth: Studies on the relationship of earnings quality and corporate governance:

AFaanz, Newsletter, 2005 examined the relationship between earnings quality and corporate governance variables, where the Total Entitlement Scale used by Richardson et.al (2004) was used to measure the quality of earnings. The study included 230 Australian companies from 2001 to 2003. The study concluded that there is a statistically significant relationship between earnings quality and stock owned by managers, but the Independence of Board Members and Board size has not been shown to have any relationship between them and earnings quality.

Machuga and Teitel, 2007 examined the relationship between earnings quality and corporate governance law in Mexico. The study used several measures to measure extraordinary accruals and apply to all shareholding companies during the period from 1998 to 2002. The study found that earnings quality increased after the implementation of the corporate governance law.

On the other hand, Lin, et.al., 2006 examined the performance of audit committee characteristics and their impact on earnings management as an indicator of the quality of earnings. A sample of 106 companies was used. The study found that there is an inverse relationship between the size of the audit committee and earnings management.

Agrawal and Chadha (2005) have shown the impact of rewriting financial statements in the presence of accounting scandals and the impact of corporate governance after application. The study used 159 joint-stock companies during 2000 and 2001 and was compared with companies that did not undergo the process of rewriting the financial statements. The study found that companies are likely to re-write their reports with a board of directors and a review committee with independent members and financial and operational expertise. The likelihood of companies redesigning their financial reports increases in cases where the CEO is from the family that founded the company.

The researchers conclude by extrapolating from previous studies on the concept and methods of measuring the quality of earnings:

1. The scarcity of the earnings quality studies in applied research since most of the previous applied studies were on commercial and industrial companies.

2. Some studies have pointed out the importance of using the measurement of accrual accounts in measuring earnings management as a reflection of the quality of earnings.

3. Several studies have used the characteristics of earnings quality such as continuity, timeliness, and conservatism in measuring the quality of declared earnings through the published financial statements as a reflection of the quality of financial reports.

4. Some studies have agreed to address some variables that clearly interpret earnings quality such as total operating cash flows from the cash flow statement to exclude the effect of the discretionary accruals as a result of 'deliberate' earnings management practices.

5. Some studies reported a statistical relationship between the variables of corporate governance such as the independence and size of Board, ownership percentages, existence of audit committees, and manager-held shares with earnings quality through the use of the quality model of receivables.

(2)

Rooting the concept, the importance and dimensions of earnings quality

Due to the different view of the users of the financial statements in terms of their objectives, their earnings outlook, and the extent to which they continue in the future, these earnings must be appropriate and dependable to obtain the quality required to help predict future flows (Dechow and Schrand, 2004).

As a result of the differences in the views of the users of the financial statements, the concepts of earnings quality differed

according to many researchers. Afaanz Newsleter, 2005 defined it as the continuity of earnings and its current ability to forecast future earnings. Schipper and Vincent (2003) defined it as the earnings realized and spent with the preservation of wealth (economic earnings), ie, the earnings declared by the company reflect truthfully and realistically its real and actual earnings.

In keeping with previous concepts, Bellovary et al., 2005 found that earnings quality is the ability of disclosed earnings to express the company's real performance and predict future earnings and its non-volatility. Hermanns, 2006, addressed the quality of earnings as the continuation of the current flow of earnings in future periods and the ability of current earnings to reflect the current and future performance of the company. Continuity is the extent to which the company is able to maintain its long-term earnings or current earnings capacity to give a good indication of future earnings.

Demerjian et al. (2013) showed that the quality of earnings is related to the duration of those earnings. The greater the correlation between accruals and cash flows, the higher earnings quality.

Accounting literature and thought have addressed a number of alternative definitions of earnings quality that addressed by researchers as follows: (See Melunard and Nissim, 2008; Ghosh and Moon, 2010).

1. Conservatism: The high quality of earnings is retained moderately depending on its future earnings.
2. Economic Earnings: the quality of earnings is considered to be high when the resulting earnings reflect the change in the value of the assets.

3. Persistence or Sustainability: Earnings of high quality are characterized by repetition and sustainability, i.e., current earnings is a good measure of the expected level of earnings in future years.

4. Stability: the stability of fluctuations and variability of high quality earnings over the following years.

5. Predictability: the ability of earnings of high-quality to forecast future earnings.

6. Relationship to Cash Flows: earnings of high-quality have a strong relationship to past, current and future cash flows.

From the above, the authors see that the concept of earnings quality is related to the specific characteristics of the published financial statements that include information on earnings, which reflects:

1. Continuity of earnings, low volatility and predictive ability.

2. The quality of operational cash flows, the approach to economic income and neutrality, and the honest representation of the actual performance of the economic unit.

The importance of earnings quality:

Earnings quality takes its importance from different angles according to the objectives of the financial statements users as follows: (See Schipper and Vincent, 2003;Barth et.al., 2008-Fancis et.al., 2004 (A), Ezat, 2016).

- It is one of the most important sources of information for investors and analysts to assess the performance and risks of the company.

- A direct indicator for assessing the quality of accounting standards applied in the economic unit, where there is a direct correlation between earnings quality and accounting system quality applied and the extent of its compliance with accounting standards.

- Earnings will benefit creditors and lenders to see how well the economic unit can repay its debts and thus continue their relationship with the economic unit in the future.

- The company management is concerned with achieving earnings characterized by high continuity and good predictive capacity, indicating a relationship between earnings quality and company management.

- Current and potential investors are highly concerned with the ability of companies to distribute dividends and the sustainability of these distributions and their amount, indicating a relationship between earnings quality and the distribution of dividends.

Earnings Quality Scale:

Several studies have used earnings characteristics as a means of measuring the quality of accounting earnings. Francis et.al., 2008 identified seven earnings quality measures (called earnings characteristics or attributes) and were classified as accounting-based earnings attributes. These include Accrual Quality, Persistence, Predictability and Income Smoothing. These specifications or attributes are based on cash flows or earnings as the basis for calculating and estimating accounting data.

There are also market-based earnings attributes, namely, Value Relevance, Timelines, and Conservatism. These specifications take stock prices and returns as a basis for estimating their estimates.

In accounting thought, there are many measures used to measure earnings quality. The researchers will review some of them to serve the importance of this study as follows:

1. Quality Measurement Scale:

This measure is based on the four quality dimensions used by the Financial Accounting Standards Board (FASB), namely, predictive value, timeliness, neutrality and faithful representation. Brown and Sivakumar, 2001 used

three measures to assess the earnings quality: predictive, adaptive, and informative content. The predictive capacity was tested to estimate future quarterly earnings, adaptive by determining the highest earnings measure in terms of explanatory power and in terms of earnings multiplier. Information content is determined by the measure that has the greatest explanatory power and gives the greatest value to earnings response coefficient. Velury and Jenkirs, 2006 and Barua A., 2006 focused on quality dimensions as a key measure of the quality of accounting earnings.

2. Continuity of Earnings Scale:

This metric indicates how current earnings relate to future earnings. It measures income from continuing operations by dividing earnings into cash flows and receivables. Accruals are used as an indicator of continuity and a measure of earnings quality. In this context, investors' decision often depends on the entity's continued profitability, which reflects the ability of the components of the earnings to continue stable from year to year. One of the most important studies based on this measure is Altamuro & Beatty (2006) as a measure of earnings quality. It defined it as the degree of continuity of current earnings during the future period and relied on the simple linear regression equation that links the current and future earnings, including the beta coefficient to measure the continuity of earnings and took this relationship as follows:

$$\frac{Earn_t}{Total\ ASSE_{t-1}} = a + b\ \frac{Earn_{t-1}}{Total\ ASSE_{t-1}} + E_f$$

The previous equation shows the relationship between the current and future earnings figures relative to the total assets for the first period and and **b** is the slope coefficient of the line. The closer this coefficient is to 1, the greater the continuity of future earnings.

In this case, the regression coefficient is a measure of profitability and the effect of the change in earnings can be divided into a change in cash flows and a change in receivables. Another trend is to divide the components of net earnings by the degree of continuity to:

A. The recurring part is the earnings expected to continue in the future and is associated with the normal activities of the entity and that are expected to be replicated in the future.

B. The non-recurring part of the earnings, which is not expected to be repeated in the future. This part is associated with unusual activities that are expected to be non-recurring in the future and this part of the

earnings is not informative in the forecasting of future earnings.

3. Ability to predict earnings:

The predictive capacity of earnings can be defined as the ability of the earnings and its components to improve the user's ability to predict financial items, that is, the earnings ability to predict earnings on their own. This is one of the sub-characteristics of the informational convenience standard, which is the ability of current accounting earnings to predict future earnings. It is worth mentioning that the predictive power scale is derived from the model used to measure continuity. In quantitative terms, this measure can be expressed through the square root the estimated error variance derived from the equation of the regression model, which is the estimation error of the earnings continuity equation, as follows: Francis et 2004).

$$Pred_{xn} = \sqrt{\sigma^2_{xn}}$$

Predxn expresses the predictive capacity of the x earnings in year n, and $\sigma 2$ expresses the variance of the estimation error of the company x over the period n. The higher the square root of the variance is significant, the lower the predictive capacity of earnings and the then lower the earnings quality.

4. Accrual Accounts Scale:

Accrual accounts are created as a result of applying the accrual basis in accounting to resolve timing and non-corresponding problems associated with the cash flow information for the accounting period. Accrual accounts are temporary adjustments that convert cash flows across different time periods. The accounting earnings calculated on an accrual basis consist of two parts, one of which is cash and is shown in the form of cash dividends and the other part is deferred accrual accounts (see: Ball and Shivakumar, 2005).

Consistent with the above, the gap between net earnings and operating cash flows may arise as a result of accruals through the company management adjusting cash flows depending on accounting accruals. Accounting for accruals requires the assumption and estimation of future cash flows. Thus, accruals are the result of personal judgment and appreciation (see Richardson et al., 2005). There are several alternatives for determining the value of accrual accounts according to the classifications referred to in many previous studies, which are illustrated by the researchers in figure 2 (See chung et.al, 2002; Ducharme et al., 2004; Lo, 2008-Cohen and Zarowin, 2010).
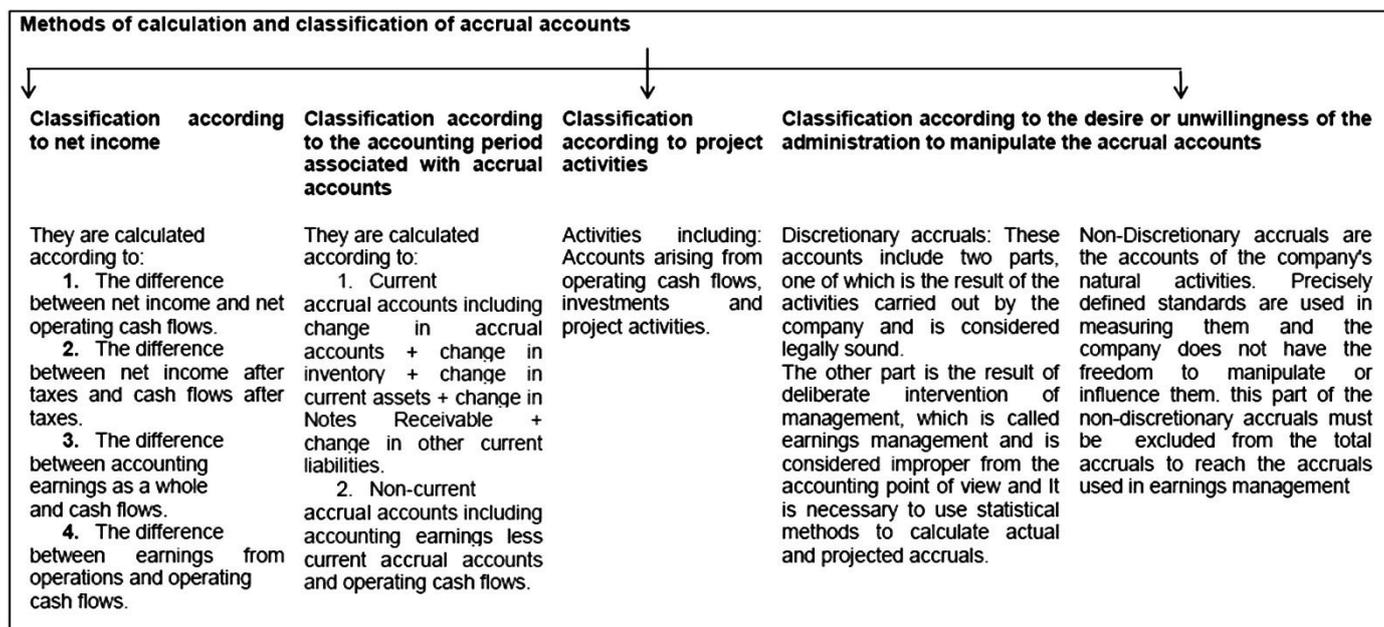
Figure 2: Shows the classification of accrual accounts

Accruals can be used as an indicator that reflects the quality of performance in companies. The quality scale of the accrual depends on the description of the earnings quality as high as the cash flows close to the earnings figure. Richardson et al., 2004, based on the value of total accruals as an indicator of determining the level of earnings quality according to the following equation:

TAAC=ΔWC+ΔNCO+ΔFIN, where TAAC = absolute value of total receivables, WWC = change in working capital, NNCO = change in net non-current operating assets and FFIN = change in net financial assets.

Through the ratio of the previous components to total assets, the quality of earnings can be judged. The higher the financial accruals are, the lower the level of earnings quality. Dechow & Dichev, 2002 relied on the quality of working capital accruals in each of the previous, current and future periods of cash flows from operating activities and was therefore depend on the linkage of current accruals with arrears and current and future cash flow from operational activity through the following relationship:

$$\frac{TCA_{jt}}{ASSETS_{jt}} = a + b \frac{CFO_{jt-1}}{ASSETS_{jt}} \quad \frac{CFO_{jt}}{ASSETS_{jt}} \quad \frac{CFO_{jt-1}}{ASSETS},$$

where TCA = firm j's total current accruals in year t,

Assets = Average total assets of companies from the current and previous year,

CFO = cash flows from operating activity for year t,

and Vjt = Arrears which is the part that is not explained by the regression variables.

1. **Scale of earnings free from the practice of earnings management**

This metric is based on the previous one of discretionary accruals. It reflects the company's deliberate management of its earnings. This metric is based on the percentage of discretionary accruals as evidence of earnings management. The lower the percentage is, the higher the quality of earnings (see Perols and Lougee, 2011).

(3)

The proposed model for measuring earnings quality

The proposed model relies on a number of models that the researchers attempt to apply through the published financial statements of the cooperative insurance companies in Saudi Arabia in order to answer the research problem.

The researchers presented three proposed models to measure earnings quality as follows:

The first model shows achieving earnings continuity that is one of the characteristics of earnings quality.

The second model illustrates the ability to predict future earnings.

The third model depends on the measurement of accruals quality to show the relationship between management and earnings quality.

Here is an explanation of previous model-building phases:

The first model:

Due to the nature of the accounts of cooperative insurance companies, the researchers are trying to establish a quantitative metrics to measure the continuity of earnings as an indicator of earnings quality using surplus or deficit of insurance operations and total assets in addition to earnings per share as in the following form:

EPSit

N$\underline{st}$

$$CE_t = \alpha + b_1(E_{t-1}/TA_{t-1}) + b_2(\quad) + \varepsilon_t,$$

where CEt-1: Continued earnings which can be calculated using surplus or deficit of insurance operations divided by the total assets of the previous year, α: the stable part, B: Regression coefficient. The closer the regression coefficient of the correct one is, the higher the future earnings will be, and this is consistent with the results of the study (Newsleter, 2005), Et-1 / TAt-1: Surplus or deficit of insurance operations divided by total assets for the previous year, EP$\underline{St}$ / N$\underline{st}$: The company's earnings per share at the end of year t divided by the number of shares and εt: represents the amount of random error (residues).

Concerning earnings per share for the current year EPSit, it is based on the following regression equation:

$EPS_{it} = \varphi_0 + \varphi_1 EPS_{it-1} + V_{it}$, where continuity can be measured through the coefficient (φ_0), where EPSit-1: the Company's earnings per share at the end of the previous year and measured by surplus or deficit of insurance operations divided by the total number of shares authorized, φ_1: regression coefficient. When it is close to 1, this indicates strong earnings continuity and vit: regression errors (residuals).

The second model:

This model measures the predictability of earnings and it is complementary to the first model. It depends on the standard deviation of the regression errors (itv), where Franciset.al, 2004 (B) found that the size of small values of standard deviation is more indicative of earnings forecasting.

The third model:

This model measures the accruals quality as a measure of earnings quality as earnings quality aims to sustain cash flows more than the continuity of accruals. Thus, high-quality earnings are close to cash flows (see Richardson et al., 2005). The basis of this model depends on the size and practice of earnings management as an alternative variable of earnings quality represented by the volume of discretionary accruals. The aggregate accruals consist of non- discretionary accruals due to the practice of the company's activities. Discretionary accruals are the result of management's attempt to influence earnings figure (see Ratsula, 2010). Since the total accruals of

any company represent current and future earnings, the proposed formula is:

Equation (1): GAt = STt-OCFt,

where

GAt: The total corporate accruals for the current year.

STt: Surplus or deficit of insurance operations.

OCFt: Cash flows from operating activities.

Non- discretionary accruals can be calculated from equation (2):

$$NDA_t = \alpha_1(1 \quad) + \alpha_2(\quad) + \alpha_3 (\quad) + e_{it}$$

where

NDAt: Non- discretionary accrual in year t divided by total assets at the beginning of the year.

At-1: Total assets at the end of the previous year.

ΔR: Change in the Company's revenues for the current period.

F: Total fixed assets before deduction of provisions for the current period. The objective behind the use of fixed assets is that they reflect the Capital Intensity.

ΔACR: Change in accounts receivable (accounts receivable).

eit: estimation error.

$\alpha_3, \alpha_2, \alpha_1$: Estimated coefficients by using the following form:

$$GA_t = \alpha_1(\quad) + \alpha_2(\quad) + \alpha_3 (\quad) + e_{it}$$

Discretionary accrual Account:

It is calculated by the difference between the volume of non-discretionary accruals of the company calculated from equation (2) and the total benefits of the company from equation (1) and thus the equation is as follows:

$$DA_t = GA_t - NDA_t$$

According to the results of many studies and accounting research, the volume of discretionary accruals should be measured in absolute value to reveal earnings management practices to reflect earnings quality. Quality increases by decreasing the absolute value of discretionary accruals. The reason for preferring the absolute measurement of discretionary accruals is due to the weakness of the explanatory capacity of the direction and diversity of the company's motives for earning management as well as the appropriateness of the absolute measure of the management's approach to income smoothing to correlate earnings quality with their continuity in order to maintain the relationship of current earnings with future earnings and thus achieve the quality of apparent earnings (Chung and Kallopur, 2003-Yu, 2008; Altmuro and Beatty, 2006). Since the discretionary accruals is more susceptible to administrative manipulation, the discretionary accruals model must include a number of

variables that explain the extent to which it contributes to the realization of the quality of the accrual model and the control of possible measurement errors. The researchers suggest using the following form:

$$QDA_t = \beta_0 + \beta_1 size + \beta_2 ROA + \beta_3 LEV + \beta_4 OCF + v_{it,}$$

where

$\beta 0$: Fixed value, which is the level of earnings quality without taking other factors.

QDAt: discretionary accruals quality.

Size: the company size, where the researchers assume that the larger the company, the higher the earnings management practice. Many studies have shown a strong impact of the company size on earnings management practices, where the company size is measured by the natural logarithm of the total assets of the company. (See Sun and Rath, 2008; Noronah and Zeng, 2008- Gul, et.al., 2009).

ROA is the rate of return on assets that reflects the company's performance and profitability. The two researchers tried to test the impact of this variable on earnings management practice. This variable is measured by dividing the net earnings of the company relative to the total assets of the company.

Several studies have shown that high-earnings companies are trying to reduce their earnings by using discretionary accruals to be more profitable in the coming years, reflecting the quality of management of using the available resources (see Sun and Rath, 2009).

LEV: it represents the total claims of insurance operations, where the results of the study of (Iatridis and Kadorinis, 2009) indicate that the management executes practices for earnings management in order to alleviate the problems of high indebtedness. So the researchers try to test this variable to illustrate its impact on the quality of discretionary accruals, by dividing the total claims insurance operations on the total assets of the company.

OCF: This variable represents the cash flows from operations that are obtained from the cash flow statement. The researchers attempt to test the effect of the cash flow variable on the quality of discretionary accruals. This variable can be measured by dividing operating cash flows on the total assets of insurance companies.

vit: random error.

B1, B2, B3, B4: model coefficients.

(4)

Application and Results

Introduction:

This study deals with the applied study through the proposed models mentioned above, which reflect the concept of earnings continuity, the ability to predict future earnings, and the relationship of management and earnings quality based on the model accruals. Based on the above, the researchers will present in this study the population and study sample, the sources of information and data obtained, the statistical methods used for data analysis and hypothesis testing, as well as the presentation and discussion of the results of the study.

Population and Study Sample:

To achieve the objectives of the study, the study population consists of all 35 public cooperative insurance companies in the Kingdom of Saudi Arabia, whose financial statements listed on Tadawul website of the Saudi Capital Market Authority. To determine the sample of the study, 14 companies that did not have some of the necessary data for the study were excluded. Thus, the sample size in this study is 21 companies. The percentage of companies in the study sample represented 60% of the total number of cooperative insurance companies in the Saudi market as in the research appendix.

Data Collection Resources

In order to achieve purpose of the study, the researchers relied on the following resources:

1. Relevant reference materials and periodicals.

2. Published financial reports of (21) companies from 2009 to 2012 which are sufficient to achieve the objectives of the study. No data were available for 2013, at the preparation time of the study.

3. The financial statements were obtained from the Tadawul website, which is monitored and supervised by the Capital Market Authority of Saudi Arabia.

4. Selection of companies that have shares traded in the stock market at the preparation time of this study was taken into consideration to reflect the fact of published financial statements.

Statistical analysis method:

The researchers collected the data and then dumped it into the spreadsheets program (Excel tables) to perform calculations at the level of each company. The surplus or deficit of insurance operations in the current and previous year, total current and previous assets, earnings per share and the values of the study variables were obtained at the end of each year to measure continuity and predictability of earnings and the use of accruals form to access the earnings management through the residual of the model, where the researchers used the following statistical methods:

1. Normal Distribution Test to validate the data for statistical analysis by recognizing the extent to which the data gets close to a "Normal Distribution". If these data are not naturally distributed, the necessary treatment should be performed on these data, which enables us to use them correctly to test hypotheses.

test for Multicollinearity will then be used. Then testing for autocorrelation will be used and finally, Heteroskedastiaty will be also used.

2. Use of the Multiple Regression model to predict earnings management in the third model through a set of independent variables to represent a linear equation and to know the direction of this potential relationship of the companies in the sample.

Results of the applied study

The two researchers explain the statistical results of the sample of 21 companies during the period from 2009 to 2012, where the total number of views is 504 views.

First: Normal Distribution Test to validate the data for statistical analysis

The following table 1 shows the tests necessary to verify the validity of the data for statistical analysis in order to verify its suitability for testing the hypotheses.

Table 1 shows the validity test of the statistical data of the proposed model variables

variable		Jarque-Bera Test		Multicollinearity	
		Prob.	J-B	VIF	Tolerance
1	Assets	0.1829	1.50838	1.251	0.823
2	Earnings	0.0759	0.43956	1.317	0.61
3	Earnings per share	0.0721	1.64824	1.477	0.617
4	Operating cash flows	0.0579	1.03547	1.48	0.626
5	Total revenue	0.1354	0.92168	1.366	0.638
6	Total fixed assets	0.0654	0.76982	1.375	0.719
7	financial accruals	0.0513	1.57865	1.288	0.51
8	Company size	0.0697	1.86947	1.33	0.807
9	Rate of return on assets	0.0584	0.87669	1.252	0.694
10	Operating leverage coefficient	0.08293	1.76247	1.403	0.962
11	Total claims	0.09111	0.89123	1.299	0.834
Autocorrelation				1.625	
Heteroskedasticity (white test)				0.03512	

Source: Prepared by the researchers based on the statistical results

Table 1 shows the following:

1. Jarque-Bera Test Results:

This test is performed to verify that the data is naturally distributed, where the Jarque-Bera Test was used. Accepting hypotheses forms the decision basis if the p-value of the test statistic is greater than 5%. The above table shows that all three model variables follow the normal distribution as P-value is greater than 5%.

2. Results of Test for Multicollinearity:

This test is a measure of the correlation effect between the variables involved. Multicollinearity is examined using the Collinearity Diagnostics to calculate the Tolerance coefficient

for each independent variable to obtain the Variance Inflation Factor (VIF). If the VIF coefficient does not exceed five, this indicates the strength of the study models in the interpretation of the effect on the dependent variable. Table 1 shows that all proposed model variables are less than five, indicating that the models do not have multicollinearity problems.

3. Results of Test for Autocorrelation:

This test demonstrates that there are no problems affecting the validity of the proposed study sample variables by using the Durbin Watson Test. This test indicates the validity of the values of the receiving variables and their significant correlation with the dependent variable. The value of this test is between 0 and 4 where the near zero result indicates a strong positive correlation and the result close to (4) indicates a strong negative correlation. Table (1) shows that the test result is 1.625 and is within the appropriate range of (1.5-2.5), indicating that there is no problem in testing the self-correlation of the proposed model variables.

4. Results of Test for Heteroskedasticity:

This test measures the random error variation in the proposed models. It is one of the assumptions of linear regression and its value is less than 5%. Table (1) shows that the non-stability test is equal to 3.5%. This indicates the stability of the standard error variance and that the proposed study models are valid for estimating the value of independent and dependent variables.

Second: Hypothesis testing:

This study is based on three proposed models for measuring earnings quality through the hypotheses based on them. The two researchers were testing the study hypotheses through the impact of continuous profitability on earnings quality in cooperative insurance companies in Saudi Arabia. Then they examine the impact of the ability to predict future earnings as well as the extent to which accruals affect the management and earnings quality. The researchers used a multiple regression model to test the study data from 21 companies from 2009 to 2012 to estimate the relationships between variables. The following are the validity tests of the study hypotheses:

1. First hypothesis validity test:

The first hypothesis states that there is no statistically significant effect between the concept of continuity and the predictability of future earnings and the quality of earnings.

Table (2) presents the results of the test of the relationship between the model of earnings continuity and predictability of future earnings using the common regression model. Since the dependent variable of earnings quality is a connected variable, the lower squares method can be used to estimate a multiple regression.

Table (2) shows the relationship between the continuity model and the earning forecasting model

Variable	Beta	t-test	P-value (Prob)
Earnings Continuity	8.929255716	30689036	0.001679
Ability to predict earnings	-504472279212	20859007	0.040163
F-test	2.6589		
P-value (Prob.)	0.004187568		
R	0.827378692		
R2	0.6845555		
Adjusted R2	0.649506111		

Source: Prepared by the researchers based on the statistical results

The above table shows that the coefficient value of the Continuity Variable (Beta) is positive, ie, there is a positive relationship where the greater the profitability, the higher the quality of earnings. There is also a negative correlation between the standard deviation and the predictive capacity of future earnings and earnings quality, where the calculated t-statistic value of the variables is greater than the tabular value at 95% confidence level, which is 1.67. The value of P-value was less than 5% for both variables. The coefficient of determination has reached to 0.684, ie, independent variables in the model explain 68.4% of the changes in the dependent variable of the quality of earnings. From the above, it becomes clear that null hypothesis is not true and the alternative hypothesis is true, which states that there is a statistically significant effect between the concept of continuity and the ability to predict future earnings and the quality of earnings.

2. Second hypothesis validity test:

The second hypothesis states that there is no statistically significant relationship between the management and quality of earnings. Table (3) presents the results of the relationship test between the variables of the third model of accruals quality and earnings management and its impact on the quality of earnings. The Least squares method was used to estimate a multiple regression.

Table 3 shows the relationship between the third model variables of the management and earnings quality

Variable	Beta	t-test	P-value (Prob)
Total accruals	2.304136	1.62458	0.043624
Non-Discretionary accruals	0.359867	0.865966	0.039731
F-test	3 .026149		
P-value (Prob.)	0.023624		
R	0.594858		
R^2	0.353856		
Adjusted R^2	0.665295		

Source: Prepared by the researchers based on the statistical results

The previous table 3 shows a positive relationship between total accruals and Non-discretionary accruals. The coefficient (Beta) of the total accruals shows 2.3%, which is relatively high and this is evidence of the existence of large dues for the sample companies as confirmed by the calculated t-statistic value of this variable that is below its tabular value which is 1.67. The value of P-value was also close to 5%, which confirms the increase in the volume of accruals. The Beta coefficient of the non- discretionary accruals variable also indicates that a small proportion of the study sample companies exercise the non- discretionary accruals accounts properly. This is confirmed by the value of t-statistic 0.865, which is below the tabular value of 1.67 at 95% confidence level. The coefficient of determination is 0.353. It indicates that the independent variables in the third model explain 35.3% of the changes in the dependent variable which is earnings quality. From the above, it becomes clear that the null hypothesis is not true and leads to the acceptance of the alternative hypothesis, which states that there is a statistically significant relationship between the management and earnings quality.

3. Third hypothesis validity test:

The third hypothesis states that there is no significant effect between the discretionary accruals variables to detect earnings management and earnings quality. Table 4 presents the results of testing the variables of the model of discretionary accruals and their effect on earnings quality. The Least squares method was used to estimate a multiple regression.

Table 4 shows the results of the third hypothesis test for the study variables

Variable	Beta	t-test	P-value (Prob)
Company size	0.6248	2.458557	0.000102
Return on assets	0.3468	2.642496	0.031649
Debt ratio	0.4965	1.698215	0.002651
Operating cash flow coefficient	0.7264	1.791348	0.015349
F-test		7.92136	
P-value (Prob.)		0.03165	
R		0.650043	
R2		0.422556	
Adjusted R2		0.413533	

Source: Prepared by the researchers based on the statistical results

The previous table (4) shows the extent to which independent study variables affect earnings quality and thereby there is a positive relationship as follows:

A. Beta of the company size (2.624) represents a positive value which was measured using the natural logarithm of total assets. This indicates a strong positive relationship to the practice of earnings management in sample companies. The calculated t-statistic (2.45) is larger than the tabular value (1.67) and the value of P-value is less than 5%.

B. Rate of return on assets: Beta value was positive (0.346) and slightly reduced due to the loss of some of the sample companies. This indicates that some sample companies try to reduce their earnings in the year in which the management is changed and the new administration then attempts to show the earnings of the following years to demonstrate its good management of available resources. The value of t-statistic is 2.64, which is greater than its tabular value (1.67) and the value of P-value is less than 5%.

C. Leverage ratio: Beta value is positive (0.496) indicating that this variable is associated with the dependent variable.

This variable also indicates the high rate of indebtedness of the sample companies, which explains its correlation with earnings management practices in some sample companies where the t-statistic value is higher than its tabular value (1.67) and P-value is less than 5%, where it achieved (0.0026).

D. Operating cash flow variable: The statistical results of this variable show that there is a positive relationship that has an effect on the dependent variable, which is accruals quality. This confirms the

value of the beta coefficient is 0.726 with a high value of t to 1.79 and more than its tabular value (1.67). P-value) is also less than its tabular value (5%).

The coefficient of determination for the model has reached 0.422, meaning that the independent variables in this model explain (42.2%) of the changes in the variable of the discretionary accruals. Based on the above, the original hypothesis of this test is false. The results confirmed that there is an impact of the company size variables, rate of return on assets, debt ratio, and operational cash flows on the discretionary accruals.

Comparison of results of the proposed study models in measuring earnings quality:

The researchers used three suggested models to measure earnings quality and suggest that the sample companies should be classified according to a quantitative scale that reflects earnings quality of the company under study. Companies were arranged in descending order according to the results of the study variables. For the purpose of standardizing the measurement instrument, these results are encoded on a five-point scale (1. very good; 2. good; 3. average; 4. weak; 5. very weak), reflecting the performance of these companies as shown in Table 5 below.

Table 5 shows the classification of companies sample according to the proposed measure of earnings quality

Earnings quality level	Variables that reflect earnings quality								General average of earnings quality indicators	
	Continuity		Earnings per share		Ability to predict earnings		Accruals quality			
Statistical results	Average Transactions B1, b2		Average Transactions φ_1, φ_2		Standard deviation number		Average Transactions a_1, a_2, a_3			
	No. of firms	%	No. of firms	%	No. of firms	%	No. of firms	%	Total	%
Very good	2	10	1	5	2	10	4	19	2.25	11
Good	2	10	2	10	2	10	3	14	2.25	11
Average	4	19	7	33	7	33	5	24	5.75	27
Weak	6	29	6	29	6	29	3	14	5.25	25
Very weak	7	33	5	24	4	19	6	29	5.50	26
Total number of companies	21	100	21	100	21	100	21	100	21	100

Source: Prepared by the researchers based on the statistical results

In the above table, the researchers used the proposed model coefficients from φ1, φ2, a1, a2, and a3 as well as coefficients b1, b2 and the standard deviation of the classification of companies according to the level of earnings quality based on the results of statistical analysis for four consecutive years. As is clear from the above table, the average number of companies with very poor quality is 26%, 25% of companies are of poor quality, and 27% are of the average quality level. Since it is natural that the general trend of companies is to achieve high quality level, it can be said that these companies,

which represent 78% of the sample size (16 companies) almost achieved a low quality, which is confirmed by the results of the tests of study hypotheses.

Results, recommendations and research proposals

The main findings of the study, recommendations and research proposals can be summarized as follows:

First: The key results of the study

1. The quality of earnings is of great importance to investors, creditors, shareholders, unit administrators, and regulatory bodies because the continuity of earnings and the continuity of the relationship in the future are reflected by earnings figure announced.

2. There have been many previous studies on the quality of earnings applied to industrial and service companies, but this study used the published financial statements of the cooperative insurance sector in Saudi Arabia as an additive application in this vital area.

3. The study showed the concept of accruals accounts in detail, especially the discretionary accrual accounts, which are managed by administrators in the Economic Unit in the form of deliberate practices aimed at earnings management.

4. Due to the nature of the accounts of private cooperative insurance companies, this study presented a number of accounting models proposed to measure earnings quality. The researchers developed some models used in the previous studies by introducing some modifications by adding some variables as follows:

    A. The study added to the proposed first model the EPS variable in the earnings equation used previously by Altamuro & Beatty, 2006.

    B. This study has developed the equations of some previous studies such as Ratsula (2010) in the measurement of non-discretionary accrual. A new variable was added to the accounts of the debtors to show the effect when measuring the accounts of the total accrual.

    C. The study used some additional variables that Sun and Rath (2009) used to show their effect on the quality of discretionary accrual in order to measure the earnings management practices of the sample companies. The variable rate of return on assets was added to express the performance of the company and its level of earnings.

5. The results of validity of the statistical analysis of data showed the following:

    A. The results of the normal distribution test (Jargue-Bera Test) showed that all the variables data in the three proposed models are distributed naturally since the P-value is greater than 5% for all models.
    B. The results of the test for Multicollinearity showed the correlation between the proposed model variables as the value of the VIF coefficient did not exceed five degrees, indicating the strength of the models in the interpretation of dependent variables.

    C. The results of test for Autocorrelation showed a strong correlation indicating that there were no problems or objections affecting the validity of the variables of the proposed study models.

    D. The results of instability of the random error test showed that the proposed study models were valid for testing the hypotheses by 3.5%, as they did not exceed 5%.

6. **Results of hypothesis-testing validity showed the following:**

    A. There is a positive effect between earnings continuity and earnings quality while there is an inverse relation between the ability to predict earnings and the quality of earnings, which invalidates the first hypothesis.

    B. The result of the second hypothesis test showed that there is a positive correlation between total accruals and the non-discretionary accruals, which proves the validity of the second hypothesis.

    C. There is a significant effect between variables of discretionary accruals, namely the company size, the rate of return on assets, the ratio of indebtedness, and operating cash flows, and earnings quality.

    D. (R2) in the proposed models was 68.4%, 35.3% and 42.2%, indicating that the independent variables in the proposed models explain a large part of the changes in the dependent variable.

    E. The results of the third hypothesis showed earnings management practices. The beta values of the independent variables in the discretionary accruals model reflected positive percentages ranging from 62.4% to 49.6%, and the P-value was less than 5%.

7. The comparison of the results of the proposed study models was in the measurement of earnings quality derived from the proposed model coefficients φ1 ، φ2, a1, a2, a3; b1 and b2; standard deviation ; and 78% of sample size was of low-profit quality; and 22% was of high-profit quality.

Second: Recommendations

Based on the results of the analytical and statistical study, the researchers recommend the following:

1. Adopting the use of the continuity model of earnings and forecasting to detect the earnings quality in cooperative insurance companies.

2. Conducting educational workshops to make investors, creditors and shareholders well acquainted with the importance of quality of earnings to make rational economic decisions.

3. Acting on the need to develop a measure of earnings quality in all financial statements published in the insurance cooperative companies in a manner that inspires confidence to the surplus declared.

4. Activating the supervisory role over cooperative insurance companies in the Kingdom of Saudi Arabia in verifying the quality of net surplus after shareholders proportion before the date of publishing financial information to the public shareholders and investors.

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