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LIMITATIONS OF AUDIT FIRM SIZE, DISCRETIONARY ACCRUALS AND GOING-CONCERN OPINIONS AS AN INDICATOR OF AUDIT QUALITY

DENETİM KALİTESİ GÖSTERGELERİ OLARAK DENETİM FİRMASI BÜYÜKLÜĞÜ, İHTİYARI TAHAKKUKLAR VE SÜREKLİLİĞİ İLİŞKİN BELİRSİZLİK İÇEREN GÖRÜŞLERİN KISITLARI

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ABSTRACT

Accurate identification and measurement of audit quality is quite important for the users of financial information. However, since it is rather difficult to define and measure actual audit quality, indirect measures have been used to measure the audit quality in empirical studies. Audit firm size, discretionary accruals, and going-concern opinions are extensively used as a proxies for the audit quality, although there is no clear evidence that these proxies are good measures for audit quality. In this paper, limitations of these proxies are examined within the framework of accounting and auditing literature. Thus, it is aimed to draw attention to the problems related to the measurement of the audit quality. The limitations of the audit quality proxies described in the study point out that these proxies are not good measures for audit quality and thus alternative proxies should be investigated. Alternatively, combined use of input and output-based indicators of audit quality may provide more reliable results regarding the measurement of audit quality. Additionally, issuing a first time going-concern opinion for the financially distressed companies may be used as an proxy for audit quality.

Keywords: audit quality, discretionary accruals, audit firm size, going-concern opinions.

ÖZET

Denetim kalitesinin doğru belirlenmesi ve ölçülmesi finansal bilgi kullanıcıları için oldukça önemlidir. Ancak, fiili denetim kalitesini tanımlamak ve ölçmek oldukça zor olduğundan, denetim kalitesini ölçmek için ampirik araştırmalarda dolaylı ölçüler kullanılmaktadır. Bu göstergelerin denetim kalitesi için iyi ölçüler olduğuna ilişkin kesin kanıtlar olmamasına rağmen denetim firması büyüklüğü, ihtiyari tahakkuklar ve işletme sürekliliğine ilişkin belirsizlik görüşü verilmesi denetim kalitesi için bir proksi olarak kullanılmaktadır. Bu makalede, bu proksilerin kısıtları muhasebe ve denetim literatürü çerçevesinde incelenmiştir. Böylece, denetim kalitesinin ölçümüne ilişkin problemlere dikkatleri çekmek amaçlanmıştır. Bu çalışmada açıklanan denetim kalitesi proksilerinin kısıtları, bu ölçülerin denetim kalitesi için iyi ölçüler olmadığını ve dolayısıyla alternatif proksilerin araştırılması gerektiğine işaret etmektedir. Alternatif olarak, girdi ve çıktı tabanlı proksilerin birlikte kullanımı, denetim kalitesinin ölçümü ile ilgili olarak daha güvenilir sonuçlar sağlayabilir. Ayrıca, finansal sıkıntılı şirketlere ilk kez sürekliliğe ilişkin belirsizlik görüşü verilmesi denetim kalitesi için bir proksi olarak kullanılabilir.

Anahtar Kelimeler: denetim kalitesi, ihtiyari tahakkuklar, denetim firması büyüklüğü, sürekliliğe ilişkin belirsizlik içeren görüşler.

1. INTRODUCTION

The financial scandals experienced in the world in the early 2000s led to the questioning of the audit quality and required additional measures to ensure the quality of audit. Thus, in many countries, especially in the US, various regulations have been made by the regulatory authorities in terms of ensuring and maintaining the audit quality, and numerous theoretical and empirical studies have been conducted on audit quality. However, both the difficulty in defining the audit quality and the difficulties in measuring the actual audit quality have necessitated an indirect measurement of the audit quality¹. Accordingly, a large number of empirical studies have been carried out based on various audit quality indicators (such as audit firm size, discretionary accruals, going-concern opinions, audit fees, auditor's sectoral expertise, lawsuits against the auditor).

¹ Francis (2011:127) stated that audit quality is a complex concept and cannot be reduce to a simple definition. According to Dang (2004: 6), the perceived audit quality indicates the perceptions of the users of the financial statements and the quality of the actual audit implies that the auditor may reveal and explain the inaccuracies in the financial statements.

Audit firm size, discretionary accruals, and going-concern opinions (GCOs) are among the audit quality indicators used extensively in accounting and auditing researches. However, although these audit quality indicators are known to have limitations, they are still frequently used in the literature. Since there is no clear evidence that these proxies are good measures for audit quality, empirical researches using these indicators should be interpreted with caution¹.

In this study, limitations of audit firm size, discretionary accruals and going-concern opinions are examined within the framework of the literature. Thus, it is aimed to draw attention to the problems related to the measurement of the audit quality which is not given enough importance although it is widely known in the literature and to point out the necessity to investigate alternative measures.

The limitations of audit quality proxies (audit firm size, discretionary accruals and GC opinions) explained in this study indicate that these proxies are not good measures for audit quality and that alternative proxies should be investigated for the audit quality. As an alternative measure for audit quality, combined use of input and output-based audit quality indicators can provide more reliable results. Additionally, issuing a first time going concern opinion for the financially distressed companies may be used as an alternative indicators of audit quality.

The remainder of the paper is organized as follows. Section 2 describes limitations of audit firm size, discretionary accruals, and going-concern opinions as an indicators of audit quality. Conclusion are presented in the final section.

2. LIMITATIONS ON AUDIT QUALITY INDICATORS IN MEASURING AUDIT QUALITY

The difficulties in direct measurement of the audit quality required an indirect measurement of audit quality. In previous studies, some indicators used in the audit literature in measuring the audit quality are audit firm size, discretionary accruals, going-concern audit opinions, audit and non-audit service fees, training and experience of the auditor, sectoral expertise of auditor, number of hours spent on audit, lawsuits against auditors, modified audit opinions. The audit firm size and discretionary accruals are among the most frequently used indicators in previous studies and continue to be used in many studies. However, it is seen that the audit quality is tried to be determined by the type of audit opinion which can be considered as more direct indicator of the quality of audits. In particular, the issuance of going-concern audit opinion has started to become widespread as an indicator of audit quality. However, due to the limitations of the audit firm size, discretionary accruals and the going-concern opinions, which are frequently used in the literature as an indicator of audit quality, the empirical results of this type of studies should be interpreted with caution. Therefore, whether the criteria used as an indicator of the audit quality in the literature are good criteria for the audit quality is important for the reliability of the research findings. This requires reviewing the constraints of audit quality indicators, which are of great importance in terms of reflecting the true and fair view of the company's financial statements. Therefore, the evaluation of the constraints of these audit quality indicators, which are frequently used in empirical studies, is important in terms of interpreting the reliability of the results of the researches using such indicators and the audit quality, and searching for indicators of alternative audit quality.

2.1. Audit Firm Size

In the literature, it is accepted that large audit firms provide a higher quality audit service due to their characteristics such as independence, more personnel, more resource utilization, more experience, low risk of litigation and concern for reputation protection. According to DeAngelo (1981); the users of financial information who want to evaluate the audit quality defined by the presence of a defect

¹ DeFonfd and Zhang (2014: 276) stated that there is no consensus on which measures of audit quality are best. The study classify the measures into output-based proxies (such as going-concern opinions) and input-based proxies (such as auditor size). They classify the output-based measures as material misstatements, auditor communication, financial reporting quality and perceptions; input based –measures as auditor characteristics and auditor-client contracting features (such as audit fees).

and / or breach in the accounting system of the audited company and the possibility of public disclosure of the errors and /or frauds are obliged to bear some costs. In this case, it has been suggested that users of financial information will develop alternative quality criteria that are less costly and this measure is 'audit firm size' (DeAngelo, 1981: 186). In this context, DeAngelo (1981) suggested a positive relationship between audit firm size and audit quality. According to this view; it is argued that large audit firms will not tolerate a mistake and /or fraud in their financial statements due to the reputation and cost of customer loss they will face, and thus they will provide a higher quality service than other audit firms.

After DeAngelo (1981) found a positive relationship between audit firm size and audit quality, audit firm size as indicator of audit quality in a large number of studies (Big 8/6/5/4 versus Non-Big 8/6/5 / 4) used and continue to be used¹. However, previous studies have generally taken place in developed countries, particularly in the United States, where there is an effective control and oversight mechanism for auditors. Therefore, it should be considered to ensure that the size of the audit firm can be used as a valid indicator in developing countries where there is no effective control and oversight mechanisms for auditors and audit firms. Because, the auditor's tolerance to an error and / or fraud that found in the client company and to publicize it may be related to the possibility of the independent auditor to be caught. In fact, in Note 21 of DeAngelo (1981: 191), the following is explained: *"Of course, if the probability of being caught were zero, the auditor's expected net gain from 'cheating' in order to retain a troubled client is always positive. One function of professional organizations like the AICPA may be to curtail auditor opportunism by raising the probability of getting caught. Measures such as mandatory peer review or mandatory audit committees composed of outside directors, for example, serve this function. While it may not be in one individual auditor's narrow self-interest to raise this probability, it may be in the collective interest of auditors to do so. Thus, institutional arrangements (or regulation) may be an efficient means of accomplishing this goal."* Thus, as long as the probability of being capture is zero or very low, there is a possibility that the auditor will be allow to an error and / or fraud in the business and not to publicly disclose it. Therefore, in the environments where the institutional arrangements or structures do not motivate auditors for high-quality auditing, Big Four ones may not provide a higher quality audit service than other audit firms (Kim et al., 2003; Jeong and Rho, 2004; Rajhi and Azibi, 2008; Tsipouridou and Spathis, 2012; Yasar, 2013). For example; Jeong and Rho (2004) conclude that there is no difference in quality of audits between Big Four and Non-Big Four audit firms in Korea, where the institutional structure does not encourage auditors to provide high quality audit, as in other studies (Kim and Hwang, 1998; Jeong and Rho, 1999; Park et al., 1999) in the Korean case. In Turkey, Yasar (2013) docement that there is no difference in terms of audit quality between big four and non-big four auditors in Turkey. Similarly, Abid et al. (2018) concluded that there is no difference between earnings management applications of companies audited by big four and non-big four auditors in Pakistan sample.

In this context, there may not be a difference in the quality of auditing between big four and non-big four audit firms in an institutional structure where the oversight of audit firms is not carried out effectively, there is no effective penalty mechanism for auditors or existing penalties are not implemented in practice. Therefore, it is useful to make careful evaluations about the reliability of the empirical study findings and to test the sensitivity of the study with additional quality indicators in such institutional structures where the audit firm size is used as an indicator of the audit quality.

2.2. Discretionary Accruals

The level of discretionary accruals as an audit quality measure is one of the output-based proxies frequently used in the literature. Discretionary accruals, also referred to as abnormal accruals, are accruals arising from the discretion of managers (Bartov et al., 2002: 196). It is possible for the

¹ Dopuch and Simunic (1982); DeFond and Jiambalvo (1993); Davidson and Neu (1993); Becker et al., (1998); Francis and Krihnan (1999); Francis et al., (1999); Keasey et al., (1988); DeFond et al., (2000); Ireland (2003); Caramanis and Spathis (2006); Habib (2013); Yasar (2013).

financial statements to contain elements that would conceal the entity's actual operating results and financial position, when the quality of the audit is low. Therefore, it is generally assumed that the earnings quality will reflect the audit quality. In other words, low level of discretionary accruals can be considered as an indicator of high quality of earnings and hence the quality of audit (Myers et al., 2003; Chen et al., 2008; Chi et al., 2009).

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On the other hand, in accounting and auditing literature, discretionary accruals; in addition to the audit quality, it serves as a “silver bullet” used as a proxy for many things, such as earnings quality, accounting conservatism, auditor conservatism (Elshafie and Nyadroh, 2014: 44). However, it is not clear whether discretionary accruals used in earnings quality measurement can also be used as indicators of audit quality. Therefore, it should be evaluated whether discretionary accruals are a good indicator of the quality of audit.

2.2.1. Discretionary Accruals Models

In the literature, after the Healy (1985) study on the basis of total accruals, various models were used to estimate the non-discretionary portion of the total accruals. Among these models, if Healy (1985) and DeAngelo (1986) were to be distinguished from the early studies, the most frequently used models for estimating discretionary accruals were; Jones (1991) model, Modified Jones Model, Kothari et al., (2005) model has an important place.

In both Healy (1985) and DeAngelo (1986), non-discretionary accruals are assumed to be constant in the time period examined. However, due to the nature of accrual accounting, this is not a strong assumption since there may be a change in the level of non-discretionary accruals depending on the change in the economic conditions of the company (Dechow et al., 1995: 198).

Unlike Healy (1985) and DeAngelo (1986) models that the average change in discretionary accruals is constant and that the change in aggregate accruals is due to discretionary accruals, Jones (1991) included changes in sales and gross property, plant and equipment to estimate the effect of changes in non-discretionary accruals due to changes in the economic situation of the company. Accordingly, the following model is used for estimating discretionary accruals in Jones Model (1991):

$$TA_{it} / A_{it-1} = \alpha_i [I/A_{it-1}] + \beta_{1i} [\Delta REV_{it} / A_{it-1}] + \beta_{2i} [PPE/A_{it-1}] + \varepsilon_{it} \quad (1)$$

Where:

I/A_{it-1} = Total assets for sample firm i in year t-1,

ΔREV_{it} = Change in net revenues for sample firm i in year t,

PPE_t = Gross property, plant and equipment for sample firm i in year t,

ε_{it} = Discretionary accruals (error term) (residual value) for sample firm in year t.

Dechow, Sloan and Sweeney (1995) developed the Modified Jones Model, which is widely accepted in the literature. The only difference of this model from Jones (1991) model is the assumption that all changes in the amount of credit sales are based on earnings management practices. In the model constituted by deducting net trade receivables from net sales revenues, the error coefficient (discretionary accruals) is calculated by applying the same methods in the coefficient estimation in

Jones (1991) model. The criticism of both the Jones and the Modified-Jones model due to their misspecification issues has led to various studies to improve these models (Kang and Sivaramakrishnan, 1995; Teoh et al., 1998; Kothari et al., 2005, etc.). Among the models in question, the performance-matched model of Kothari, Leone and Wasley (2005) has been frequently used in the literature since it reduces the misidentification problems of Modified Jones Jones (1995). Unlike Jones (1991) and Modified Jones Model (1995), Kothari et al. (2015) model added a constant and added return on assets to control the performance effect to the model (Lee and Vetter, 2015: 67).

2.2.2. Limitations in the Measurement of Discretionary Accruals

Company managers are able to manage accruals and therefore earnings by using their discretionary judgements in measuring and recording accruals. In the literature, it is determined whether the managers apply earnings management by means of accruals by dividing the accruals into two components as discretionary and non-discretionary. However, since the distinction between discretionary and non-discretionary accruals cannot be directly observed, studies in earnings management used various accruals models to accurately make this distinction which is quite important for their empirical analysis (Lee and Vetter, 2015: 63). Although it is widely accepted in the literature that discretionary accruals are noisy proxies for earnings management and not appropriate measures, they are still widely used in the literature (Jackson, 2018). Therefore, several recent criticisms of the literature on measuring problems related to discretionary accruals are presented below:

Kang and Sivaramakrishnan (1995):

Kang and Sivaramakrishnan (1995) suggest that models in the studies attempting to comprehend a significant portion of the managed accruals by modeling total accruals are subject to simultaneity, errors- in- variables or omitted variable problems, any of which could lead to statistical power reduction and erroneous inferences about earnings management.

Young (1999):

Young (1999) argues that the determination of the accrual-based earnings management largely depends on the effectiveness of these models in separating the discretionary element of total accruals. He suggest that when other conditions are constant, the higher the level of random noise from the estimation procedure, the lower the power of the empirical test. Furthermore, when more systematic error is generated by the prediction procedure, the probability of bias in the empirical test increases.

Moreira (2006):

Moreira (2006) theoretically discussed the structure and sign of the measurement error integrated with the accrual models. He stated that due to the intensive use of the accrual models, the solution of their problems and inadequacies was not followed. Until recently, one of the inadequacies that has been forgotten is the reflection of conservatism on these models and their predictions. The paper predicted that measurement error would be negative for firms with “good news” in the period, and that it would be negative for firms with “bad news” in the period (Moreira, 2006: 119-122).

DeFond and Zhang (2014):

DeFond and Zhang (2014) stated that audit quality also depends on the innate characteristics of the firms and financial reporting systems, since the quality of the audit is inseparably intertwined with the quality of financial reporting. Therefore, they indicate that it is very important for empirical models to resolve the structure between the audit quality and the quality of financial reporting. The authors point out that the existing models are empirically developed without strong theoretical guidance and are unlikely to fully control firms' innate characteristics and financial reporting systems (DeFond and Zhang, 2014: 277).

Lennox (2014):

Lennox (2014) stated that, since earnings quality is a function of both management's reporting preferences and audit quality, it is doubtful whether abnormal accruals were reliable to measure the quality of the audit, even if they were appropriate for earnings quality measurement. He indicate that earnings quality may be high even if the quality of audit is low as long as the manager prepare a high quality report. Lennox (2014) also noted that there may be an inverse relationship between the manager's financial reporting quality and the auditor's effort due to the strategic nature of the interaction between the manager and the auditor. He stated that if an auditor suspects that the manager cannot be trusted to prepare high-quality reports, the auditor has an incentive to further work and perform further testing. Conversely, if the manager is reliable to report fairly, there is less need for abnormally high audit efforts (Lennox, 2014: 99).

Lee and Vetter (2015):

Lee and Vetter (2015) reported that Jones (1991) and Modified Jones Models has misspecification problems, Kothari et al. (2005) Model is unable to fully solve the problem of misspecification even though it tried to reduce the misspecification problems. The authors mentioned the following criticisms regarding the model of Jones (1991), on which most of the other accruals models are based (Lee and Vetter, 2015: 65):

- *The residuals are biased proxy for discretionary accruals* The residual value used as a proxy for discretionary accruals is assumed to be orthogonal to the independent variables. If the residuals are not orthogonal to the independent variables, the residuals are a biased proxy for discretionary accruals, especially when there is a correlation with the measurement errors in the independent variables.

- *Omitted variables problem.* If the relevant variables omitted from a regression model are associated with one dependent variable and one or more independent variables in the model, they may make parameter estimates biased.

- *Some revenue items can be managed.* The Jones (1991) model assume that all sales revenues are non-discretionary. It is assumed that no revenue record is made before the recognition conditions for the revenue are generated. However, if the sales revenues are recorded before they are realized, there will be an increase in the accounts receivables and accordingly an increase in the accruals.

In addition, Lee and Vetter (2015: 67) stated that Kothari et al., (2015) model could produce misleading correlation due to potential non-linearity between accruals and ROA, although the model appears superior to other accruals models in terms of reducing the misspecification problem resulting from heteroskedasticity in residuals and omitted variables.

Jackson (2018):

Jackson (2018) explained why discretionary accruals are not appropriate for the measurement of profit management by focusing on the following three key points from the basic econometrics (Jackson, 2018: 136-140):

1. *Peer firms affect the measurement of discretionary accruals* Jackson point out that peer firm effects have significant effects on the measurement of discretionary accruals. He stated that it is important to understand the estimating process in order to understand the potential impact of peer firms (all firms in the same industry) on discretionary accruals (Jackson, 2018: 136).

Jackson stated that, in general, the accrual models are run on an industry-year basis using an OLS model and that the majority of studies have cross-sectionally estimated the accrual models in an industry year. He discuss that the use of cross-sectional analysis by many researchers because of the insufficient observations may be indicative of abnormal behaviors due to deviations from industry norms (e.g., gross margins, which are significantly different within the industry, may be indicative of

fictional sales or inventory valuation issues). In addition, an important view in the use of OLS is that all observations will affect the regression line used to calculate abnormal accruals. He additionally point out that winsorization of variables would affect β and ε_i because the OLS is over-influenced by the effective extreme values (outliers) without taking into account the winsorization (adjusted mean to reduce the effect of outliers on the sample) problem (Jackson, 2018: 140).

2. Magnitude of discretionary accruals are not reasonable related to the size of earnings (ROA)
Jackson stated that the amount of discretionary accruals is generally not reasonably associated with the size of earnings (ROA). Given that all variables are scaled by lagged assets, the amount of managed earnings to assess the appropriateness of the results should be assessed based on ROA. Many studies applying discretionary accrual measurements report descriptive results, regardless of what economic size represents. Often, the mean value of the absolute value of discretionary accruals is greater than the average ROA in magnitude. In cases where average and median discretionary accruals are greater than ROA, articles claim that all earnings are manipulated on average. If discretionary accruals are really earnings management, this average effect should not be economically feasible (Jackson, 2018: 137).

3. Discretionary accruals models are not related with ex-post cases of known manipulation
If the discretionary accruals are the criterion of earnings management, then there must be a relationship between these and the ex-post cases of known manipulation. However, there is not enough attention to verify the accuracy of known cases of earnings management (Jackson, 2018: 137).

Christodoulou et al. (2018):

Christodoulou et al. (2018) stated that it is surprising that the alleged usefulness of the method of inference-in-residuals accepted in the earnings management literature is largely untested. Similarly to Ball (2003), they evaluate the estimates produced by the method of inference-in-residuals from the residual value as economically implausible. In the study showing the statistical deficiencies of the method in question, it is proved that a meaningful conclusion from the residual value under which assumptions holds a consistent predictor for earnings management suspicions, and when it fails to perform. In the study, analytical results were completed using real data with Monte Carlo simulations and simulations; the weak power of conclusions is proven to fully classify the suspicion of earnings management.

McNichols and Stubben (2018):

McNichols and Stubben (2018) discuss the problems about aggregate accrual models criticized by Jackson (2018) and Christodoulou et al. (2018).

McNichols and Stubben (2018) agree with Jackson (2018) that magnitude of discretionary accruals are implausible measures. On the other hand, the authors have shown a different approach by two other critiques of measurement of discretionary accruals by Jackson (2018). In this context, they agree with Jackson (2008) that the actual discretionary accrual of an industry peer will affect the measured accruals in another firm, but they state that whether this is a desired feature or not, depends on the research question.

McNichols and Stubben (2018) agree with Christodoulou et al. (2018) that the insufficient of “inference in residuals“ to classify specific earnings management cases for certain residuals is a particularly challenging task.

2.3. Going-Concern Audit Opinions

One of the frequently used audit quality indicators in the literature is the propensity to issue Going-Concern Opinions (GCO). The widespread logic of using the propensity to issue GC opinions as a proxy for the audit quality is that the high quality auditors are more likely to assess the financial conditions of the companies as well as to resist the pressure of customers not to publish GC opinions. While these justifications are valid, they do not include arguments that challenge a precise directional

relationship between auditor quality and propensity to GC opinions (Fogel-Yaari and Zhang, 2013). According to Fogel-Yaari and Zhang (2013: 3); the effect of the auditor quality on the publication of GC opinions is non-directional because an auditor's decision to issue a GC opinion is determined by three aspect of auditor quality, which are; (1) ability of auditor to determine a threshold probability for issuing a GC opinion, (2) auditor's ability to estimate the likelihood of the bankruptcy of the client, and (3) objectivity of the auditor. Fogel-Yaari and Zhang (2013) stated that it is theoretically difficult to establish a direct link between the tendency to issue GC opinions and the audit quality, and this is an empirical problem. Therefore, in the study, the validity of the GCO as an indicator of the audit quality is investigated by empirically testing whether the GCO publishing trend was actually associated with a lower audit error. The results of the study showed that auditors who are more likely to issue GCO are not in higher quality than other auditors (Fogel-Yaari and Zhang, 2013).

As one of the output-based indicators of audit quality, the GC opinions used in the literature have some limitations, as in other audit quality indicators. According to DeFond and Zhang (2014: 287), one of these constraints is that the GCO, which is an egregious structure such as restatements and AAERs, is not useful in achieving a more subtle solution in audit quality. Another constraint is the reduction of statistical power in tests using financially healthy large samples because GCs are relatively rare and are only given to financially distressed clients. The fact that the researchers mostly limit their analysis to financially distressed companies reduces the generalizability of their analysis. Another limitation is that the GCO reflects a very narrow aspect of the auditor's role and does not fully reflect the broad value of the audit. Another limitation put forward in the study is that while the literature evaluates more GCO as higher auditor independence, more GCOs may also indicate excessive auditor conservatism, which probably reduces audit quality. In the study, the risk of interpretation of excessive auditor conservatism as an increasing audit quality is expressed as an issue affecting all output-based audit quality proxies, including restatements and discretionary accruals (DeFond and Zhang, 2014: 287).

With regard to the limitations of GC opinions, Knechel et al. (2012: 24) stated that, as an audit quality indicator, the effectiveness of the auditor's report is limited due to the limited content of the audit report, namely, the auditor's report is essentially a pass / fail report.

In the literature, issuing a Going Concern Opinions is often used as a proxy for audit quality. This may lead to consideration of audit firm which does not issue a GC opinion, as an less quality audit firm since there is no significant uncertainty regarding the continuity of the enterprise. Therefore, the examination of whether the GC opinion is given or not in the sample of financially distressed companies can give healthier results¹. However, findings of the previous studies (e.g, Keasey et al., 1988; Lennox, 1999; Reynold and Francis, 2001; Yaşar, 2016; Yaşar, 2017) suggest that companies with a qualified opinion in the current year are more likely to have a qualified opinion in the following year. Therefore, issuing a first time going concern opinion for the financially distressed companies as an audit quality indicator can provide more reliable results.

3. SUMMARY AND CONCLUSION

The audit firm size, discretionary accruals and uncertainty regarding the continuity of business are considered to be prominent among the proxies used as audit quality measures in the literature. However, due to the constraints of these frequently used measures, there are uncertainties about how well they reflect the audit quality. Therefore, evaluating the constraints of the audit quality indicators frequently used in empirical studies is important for the development of alternative criteria for audit quality and thus the reliability of the research results.

¹ In the determination of financially distressed companies, it is possible to use variables determined to be effective in predicting GC opinion.

In this study, I evaluated the limitations of audit firm size, discretionary accruals and going-concern opinions, which are frequently used audit quality indicators in empirical studies, in the framework of the literature.

It is controversial whether audit firm size, which is one of the input-based proxies of audit quality, can be used as a valid indicator in developing countries where there is no effective audit and oversight mechanisms for auditors. Previous research findings have shown that, in environments where institutional arrangements or environments do not motivate high quality audits, big four auditors may not provide higher quality audit services than non-big four auditors. Therefore, it is useful to test the sensitivity of studies conducted in such institutional structures with additional quality indicators.

Discretionary accruals, which are frequently used as audit quality indicators, have been criticized in some recent studies due to measurement problems in particular, although it is widely accepted that discretionary accruals are noisy proxies for earnings management and are not suitable measures. Some of the criticisms in the literature regarding the limitations of discretionary accruals are as follows:

- Total accruals models are subject to simultaneity, errors-in-variables or omitted variable problems, any of which could lead to statistical power reduction and erroneous inferences about earnings management (*Kang and Sivaramakrishnan, 1995; Lee and Vetter, 2015*).
- The higher the level of random noise from the estimation procedure, the lower the power of the empirical test. The probability of bias in the empirical test increases, when more systematic error is generated by the prediction procedure (*Young, 1999*).
- There is a reflection of conservatism on accruals models and their predictions (*Moreira, 2006*).
- The existing models are empirically developed without strong theoretical guidance and are unlikely to fully control firms' innate characteristics and financial reporting systems (*DeFond and Zhang, 2014*).
- It is doubtful whether abnormal accruals were reliable to measure the quality of the audit, even if they were appropriate for earnings quality measurement (*Lennox, 2014*).
- There may be an inverse relationship between the manager's financial reporting quality and the auditor's effort due to the strategic nature of the interaction between the manager and the auditor (*Lennox, 2014*).
- If the sales revenues are recorded before they are realized, there will be an increase in the accounts receivables and accordingly an increase in the accruals (*Lee and Vetter, 2015*).
- Peer firms affect the measurement of discretionary accruals (*Jackson, 2018*).
- Magnitude of discretionary accruals are not reasonable related to the size of earnings (ROA) (*Jackson, 2018*).
- Discretionary accruals models are not related with ex-post cases of known manipulation (*Jackson, 2018*).
- Estimates produced by the method of inference-in-residuals from the residual value as economically implausible (*Christodoulou et al., 2018*).

Some of the criticisms in the literature regarding the limitations of GC opinions are summarized as follows:

- It is theoretically difficult to establish a direct link between the tendency to issue GC opinions and the audit quality, and this is an empirical problem. It is not useful in achieving a more subtle solution in audit quality (*Yaari and Zhang, 2013*).

- GCO is not useful in achieving a more subtle solution in audit quality (*DeFond and Zhang, 2014*).
- The fact that the researchers mostly limit their analysis to financially distressed companies reduces the generalizability of their analysis (*DeFond and Zhang, 2014*).
- GCO reflects a very narrow aspect of the auditor's role and does not fully reflect the broad value of the audit (*DeFond and Zhang, 2014*).
- More GCOs may also indicate excessive auditor conservatism, which probably reduces audit quality (*DeFond and Zhang, 2014*).
- The effectiveness of the auditor's report is limited due to the limited content of the audit report (*Knechel et al., 2012*).

The various limitations of each of the three audit quality indicators used frequently as an audit quality indicator indicate that these indicators are not good proxies for audit quality, and that alternative measures should be investigated for audit quality. As an alternative measure for audit quality, combined use of input and output-based audit quality indicators as an indicators of audit quality can provide more reliable results. Additionally, issuing a first time going concern opinion for the financially distressed companies may be used as an alternative indicators of audit quality.

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