



# Earnings Quality Research: Trend, Recent Evidence and Future Direction

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## ABSTRACT

This paper provided an overview of earnings quality research by assessing whether area of future research and challenge identified in prior studies have been addressed in the literature. Specifically, the study discussed two areas of earnings quality that have received attention in the last decade: the impact of fair value accounting on earnings quality and the models used to measure accrual quality. A comment on earnings quality during the COVID-19 pandemic is also provided. The study revealed that fair value accounting affect earnings quality and the empirical results on the effect of fair value on earnings quality are mixed and depend on the environment in which the firm operates. The study also showed that, earlier models used to measure accrual quality are still currently been used and the literature has evolved to take into consideration the innate and discretionary components of earnings quality. However, it is still not clear whether the models used to separate earnings quality into its components are effective. This paper contributes to knowledge by synthesizing new insight into the current state of knowledge on some aspects of earnings quality research. The study further identified unanswered questions in the field, which provides direction for future studies.

**Keywords:** Earnings Quality, Fair Value Accounting, Accrual Quality

**JEL Classifications:** M41, M48, G32

## 1. INTRODUCTION

Capital markets participants rely on financial information such as accounting information to make economics decision. A firm's reported earnings is the key indicator of firm's performance that convey accounting information to the users (Moslemany and Nathan, 2019; Barth et al., 2018; Francis, 2008). For this reason, the quality of a firm's reported earnings is important in capital market and has received a lot of attention in the literature.

Earnings quality (EQ) is a multidimensional and subjective concept (Perotti and Wagenenholfer, 2014; Dechow et al., 2010), as such the research in this field is diverse (Defond, 2010) and have considerably evolved over time. The areas that have received more attention include, among other, the effect of EQ on aspect of capital market such as stock return, factors affecting EQ (e.g., accounting method, firm's characteristic, etc.), the measurement

models employed to estimate EQ (Dechow et al., 2010). Studies on EQ has produced mixed results and there seems not to be an agreement on the understandings and measurement of EQ (Dechow et al, 2010).

Given the significant role of accounting information in the functioning of capital market (Barth et al., 2018; Salerno, 2014), and the lack of cohesion in the EQ literature (Dechow et al., 2010), there is a need to gain more insight into the current state of knowledge in the field of EQ. In this regard, this study conducted an overview of the literature on EQ research in order to identify, report on any development/advancement in the field and provide direction for future studies. Specifically, we build our review on the work of Defond (2010) and Dechow et al. (2010), to find out if the literature has resolved some issues pointed out in their studies. Defond (2010) has identified fair value accounting as a possible area of investigation in EQ research while Dechow et al. (2010)

have reviewed the literature on EQ measures prior to 2010, and have noted the challenges in the measurement of EQ.

Since EQ is a complex and diverse field of study (Defond, 2010), we started off by describing the concept of EQ in order to provide a background on EQ research as well its definition and importance in the capital market. Afterward, we specifically focused on two main areas of EQ research, that have received a lot of attention since the reviewed of Dechow et al. (2010) and Defond (2010), including, the impact of fair value accounting on EQ and the models used to measure accrual quality (AQ) and to separate EQ into its components. Our choice to review these areas of EQ research, is also motivated by the fact that, fair value accounting is one of the most notable changes in accounting, with many adjustments to the accounting standards, in the last ten years (Takacs et al., 2020; Yao et al., 2017). We further paid attention to AQ models since accrual is considered as a good measure of a firm's performance and incorporates the usefulness of accounting information (Larson et al., 2018; Dechow et al., 2010). In addition, AQ was the mostly used EQ measures in the papers reviewed by Dechow et al. (2010).

This review is not intended to deal with all aspects of EQ research, but rather to provide additional observations into the state of knowledge in some areas of EQ literature and highlight whether the literature has advanced to address some issues/challenges identified in Dechow et al. (2010) and Defond (2010). In addition, the paper also commented concisely on EQ literature during the COVID-19 pandemic and discussed areas of future investigation. The paper will thus hopefully be of interest to stakeholders, especially those with no knowledge in the field of EQ and those who would like to have a sketch of the knowledge in some aspect of earnings quality literature. Furthermore, the review will shed light on the overall role of fair value in financial reporting in different capital market environment, thereby informing regulators on whether the accounting standards work as intended.

The remainder of the paper is organised as follows. We begin by providing a comprehensive discussion of the concept of EQ, through its historical background, definitions and importance in Section 2. In Section 3, the advancements in EQ research are discussed followed by a comment on EQ literature during the COVID-19 pandemic in Section 4. Section 5 highlights a direction for future research and Section 6 concludes the study.

## 2. THE CONCEPT OF EARNINGS QUALITY

This section discusses the historical background of EQ followed by its definition and importance.

### 2.1. Historical Background of Earnings Quality

EQ research is a complex and diverse field of knowledge that have been studied since the last four decades and which is still evolving in the literature. Early factors that have contributed to the extensive literature on EQ include information asymmetry (Defond, 2010), the accounting fraud in the year 2000 (Defond, 2010), the 2008 financial crisis (Cherkasova and Rasadi, 2017),

the adoption of the International Financial Reporting Standards (IFRS) (Fonou-Dombeu et al., 2022).

Information asymmetry occurs when the management of a firm possess information that other stakeholders of the firm do not have. This creates the tendency for managers to use this information opportunistically and at the detriment of other stakeholders, leading to earnings manipulation (Abad et al., 2016; Richardson, 2000), which lower the quality of earnings.

Subsequent to the accounting fraud which has led to the bankruptcy of big corporation such as Enron, Parmalat, the Sarbane-Oxlext Act of 2002 was introduced to restore investors' confidence and enhance the credibility of financial reports. The Act emphasises on strong corporate governance and ethic to limit malpractice in financial reporting (Dechow and Schrand, 2004).

The change from local Accounting Standards (GAAP) to IFRS has also results in intensive literature on earnings quality with the focus on assessing the impact of IFRS on accounting quality.

EQ research has also accelerated due to the diverse models used to measure it, limitations of existing models and disagreement in EQ measures. In fact, EQ is a multidimensional concept, as such, the literature has developed several models to measure the quality of a firm's reported earnings (Dechow et al., 2010). Studies (Larson et al., 2018; Jackson, 2018; Athanasakou, 2016; Givoly et al., 2007; Kothari et al., 2005; Francis et al., 2005) have examined these models and reported their limitations and suggested improvement of the existing models. However, there still seems to be no agreement on which models measure best EQ.

Lastly, the recent global pandemic (COVID-19) has also increased research on EQ. Studies (such as Ozili, 2021; Xiao and Xi, 2021; Usheva and Vagner, 2021; Maheen, 2021; Cui et al., 2021) have attempted to examine the effect of the pandemic on the financial reporting.

### 2.2. Definition of Earnings Quality

Earnings quality is a diverse concept and its definition is tailored to each user's context (Eliwa, 2018; Perotti and Wagenenholfer, 2014; Chen et al., 2010) and its ability to display certain features. Earnings quality refers to earnings that is persistent, accurate, sustainable and good predictor of future earnings (Larson et al., 2011; Schipper and Vincent, 2003).

Dechow et al. (2010) describes earnings quality as earnings that is informative about the firm's performance and related to the accounting system used by the firm in the preparation of financial reports.

Earnings quality is further defined in term of the ability of earnings to provide useful information to the users (Nissim, 2021; Kowerski, 2013; Dechow et al., 2010). This definition of earnings quality incorporates the main objective of financial reporting which is the provision of financial information that is useful to existing and potential stakeholders in making decisions (IFRS foundation 2018).

Earnings quality therefore display the following features of useful information: relevance, faithful representation, comparability, verifiability, timeliness and understandability (IFRS, 2018).

The above definitions portray an earnings which is of high quality. However, a firm's reported earnings may also be of low quality. Earnings is of low quality if it is subject to unintentional errors that emanate from the application of accounting process and or intentional errors which result from earnings managements (Dechow et al., 2010; Barth et al., 2008; Lo, 2008). Earnings management occurs when the firm's managers use discretion opportunistically when preparing financial reports (Xiao and Xi, 2021; Nissim, 2021).

Concerning the importance of earnings quality, Nissim (2021) and Chan et al. (2006) documented that earnings quality play a fundamental role in the prediction of stock return. The authors argued that the components of earnings, such as accruals and cash flow, are related to the anomalies in stock return. In fact, previous studies (Cheng and Fang, 2022; Bansal and Ali, 2021; Kim and Qi, 2010; Sloan, 1996) have demonstrated that there is an indirect relation between accrual and stock return, indicating that firms with high accrual display a low earnings quality.

Earnings quality also has a key role in valuation. Valuation of a security is performed using some components of earnings such as earnings per share, earnings before interest and tax and cash flow (Nissam, 2021; Tan and Yu; Pinto, et al., 2019). Therefore, high earnings quality will lead to accurate valuations outcomes/ estimates. Earnings quality is further viewed as an important factor in the functioning of capital market since it incorporates the informative and stewardship role of accounting information (Fonou-Dombeu et al., 2021; Sodan, 2015).

### 3. ADVANCEMENT IN EARNINGS QUALITY RESEARCH

Since the reviewed conducted by Dechow et al. (2010) and Defond (2010) more than a decade ago, EQ research has developed. Our review focus on two main areas, we believe has contributed to a significant generation of knowledge over the past decade, including the impact of fair value accounting on EQ and the models used to measure accrual quality. The extension of knowledge in these two areas of research are discussed next.

#### 3.1. Fair Value Accounting and Earnings Quality

Before the introduction of fair value in accounting standards, a company's assets and liabilities were measured using a cost model. The change in measurement model is attributable to the belief that fair value (also called market model) are relevant and useful for decision making than cost models. Fair value model therefore supports the International Accounting Standards Board (IASB) and the Conceptual Frameworks which state that the purpose of financial reports is the provision of useful information about the financial position, performance and changes in the financial position of an entity, to investors, lenders and other users (IFRS, 2010).

Prior to the introduction of fair value accounting, the literature on EQ was based on historical cost; but since the accounting standards have shifted to fair value accounting, EQ research has expanded. Fair value accounting has been identified as a possible factor that may affect earnings quality (Defond, 2010).

The fair value and EQ literature have thus focus on examining the impact of fair value in financial reporting quality. Some studies (Honkamaki et al., 2021; Lilien et al., 2020; Hsu and Lin, 2016; Sodan, 2015) have found that the use fair value in financial reporting has led to the decrease in EQ. One of the arguments that justify this finding is that, within fair value accounting, it is sometime difficult to accurately determine the value of a security, especially in illiquid market. As such fair value is estimated with complex valuation methods/strategies. This estimation leaves rooms for errors in the accounting process and facilitate earnings management (Lilien et al., 2018; Sodan, 2015; Shalev, 2013; Barth et al., 2012). In fact, Lilien et al. (2018) and Manchiraju et al. (2016), among other, reported that managers choose fair value methods, that will assist them to manipulate financial reports.

On the contrary other studies reported that fair value has increased earnings quality (Takacs et al., 2020; Yao et al., 2018; Paoloni, 2017). The advocates of fair value believe that, since fair value reflects the current price of a security which is the starting point for the forecasting of future price, it is assumed that fair value has greater predictive power as compared to the historical cost model. Fair value therefore incorporates information about current and future cash flow and performance of a company. It is further pointed out that fair value increases transparency in financial reports since it provides timely information and make provision for corrective measures (Yao et al., 2017). In Honkamaki, et al. (2021), it is reported that for some properties of EQ, fair value model did not improve EQ relative to the cost model. Consequently, there is no difference between fair value model and cost model in influencing EQ.

The conflicting results regarding the effect of fair value on EQ, may be attributable to difference in capital market, for instance the study of Pandya et al. (2021) conducted in South Africa (SA) reported that companies in SA are reluctant to apply fair value accounting due to the inefficiency of SA capital market, high subjectivity and costs involved in the implementation. This difficulty is probably also applicable to other emerging capital market since, these markets share the same characteristics such as inefficiency, less liquid and poor information environment (Takacs et al., 2020). This raises the concern of whether the new accounting standards (e.g: International Financial Reporting Standards (IFRS) 13) are applied as intended in developing capital market. While conducting the post implementation review of IFRS13, the International Accounting Standard Board (IASB) also reported that, in the implementation of IFRS13, some challenges are experienced in area that requirement the exercise of judgement (IFRS, 2018).

In a nutshell, the literature is divided about the impact of fair value accounting on earnings quality. This divergence may be attributable to the fact that fair value accounting encompasses

complex standards, as such may be difficult to apply in illiquid capital market. In such market, it is believed that, due to the lack or poor legal enforcement, managers may use opportunistically the flexibility of fair value. In general, fair value accounting required judgment and estimations which are sometime subject to intentional and unintentional errors. However, what constitute too much error and or the quantification of the level of error which is acceptable/unacceptable is still not defined in the literature.

### 3.2. Earnings Quality Measure: Accrual Quality

Another area in EQ research which has evolved over time is the models used to measure accrual quality (AQ). The literature has developed multiple models to measure accrual quality, with the Jones (1991)'s model being the first model. The Jones (1991)'s model aims at detecting earnings manipulation (abnormal accrual) in the application of accrual process.

The development of the Jones (1991)'s model has led to extensive debate on accrual models with the focus on testing the viability of the model, reporting on its limitations and or proposing modifying version of the model to increase its viability, and or enhancing the model in order to serve as a proxy for both intentional and unintentional accrual manipulation.

It is interesting to note that the majority of accrual models developed in the literature, such as the Dechow et al. (2002) models, the Kothari et al. (2005) and the Francis et al. (2005) models have lean on the original Jones (1991) model to create other accrual models. The paper of Dechow et al. (2010) provided a detail explanation of these models.

Francis et al. (2005) went beyond the accrual model and developed a model that discern accrual quality into innate and discretionary components. In fact, each measure of EQ is the combination of two components, namely discretionary and innate components (Francis et al., 2005). The portion of earnings that is influenced by the choice of accounting policy used by manager is referred to as discretionary component whereas the innate component is affected by the firm's business model. Nonetheless, the Francis et al. (2005)'s model does not adequately separate earnings quality into its innate and discretionary parts (Defond, 2010; Athanasakou, 2016).

Earlier studies on EQ have examined each measure of EQ as a whole, ie without separating each measure from its innate and discretionary parts. However, since Dechow et al. (2010) pointed this out as a challenge in EQ research, the literature has expanded existing EQ models to address this issue. Specifically, Athanasathou (20216) has lean on the model initiated by Francis et al. (2005) to propose a model to separate the two components of EQ measures. Athanasakou (2016) argued that separating each measure of earnings quality into innate and discretionary portions leads to the reduction of errors in the measurement of earnings quality.

As other models of EQ developed in the literature, the correctness of the model used to separate EQ into its two components, will only be established in the future. Beside the two components of EQ are "unobservable constructs" (Dechow et al., 2010), as such it

might be difficult to introduce a model that will accurately separate these two components.

EQ research has continued to develop. Recent studies (Fonou-Dombeu et al., 2022; Le et al., 2021; Houcine and Houcine, 2020; Chou and Chang, 2020; Razaee and Tuo, 2019; Eliwa et al., 2018) in answering their research questions have attempted to consider the two components of EQ. In fact, the current literature provides ample evidences confirming that the innate and discretionary component of EQ indeed affect differently the aspects of capital market. For instance, Houcine and Houcine (2020), Eliwa et al. (2018) found that the innate portion of EQ display a greater impact on the cost of equity capital than the discretionary portion. Similarly, Fonou-Dombeu et al. (2022) reported that the innate portion of AQ display a higher impact on firm's stock return volatility than discretionary AQ. In the contrary, Aldamen and Duncan (2013) reported that discretionary AQ is negatively related to the cost of debt.

These findings support previous studies (Dechow et al., 2010; Cohen, 2008; Francis, 2005) that argued that the quality of reported earnings is not only affected by the application of accounting rules by managers, but also by the firm's economic environment (firm's fundamental).

Researchers, using earnings quality measures as a whole (without separation into innate and discretionary component), must be cautious when interpreting the results, since EQ is not only affected by the application of accounting rules by managers, but also by a firm's economic environment as demonstrated in the literature. Nonetheless, literature has proposed only few models used to separate the two components of earnings quality and the full effectiveness of these models is still not yet established. In the reviewed papers, the model initiated by Francis et al. (2005) is the mostly used models to split EQ into innate and discretionary portions although it displayed some limitations as pointed out in Athanasathou (2016).

Recent studies by Larson et al. (2018) have also suggested a comprehensive measure of AQ. The authors argued that the existing accrual models are incomplete and being incorrectly used to estimate AQ. In fact, Larson et al., 2018 reported that existing AQ models only consider working capital accrual (current accrual) although accrual is the combination of both current and non-current accrual items. The authors demonstrated that the "non-current accrual is more economically significant than working capital accrual". Larson et al. (2018), thus proposed a comprehensive accrual model that incorporate all components of accrual. The comprehensive accrual model developed by Larson et al. (2018) is given in equation (1).

$$CAQ = \Delta SHE - \Delta CE \quad (1)$$

Where, CAQ is the comprehensive accrual,  $\Delta SHE$  is the change in shareholders equity, is the change in cash and cash equivalent.

Like any other accrual models, only time will tell if the model developed by Larson et al. (2018) is indeed effective in measuring

earnings quality (measured by accrual quality) as compared to existing models.

Overall, the literature has developed several accrual models that have been and still been used to measure the quality of earnings. Modified accrual models have emerged in an attempt to address the limitations of earlier/original accrual models. It appears that, for most of the time, the modified Jones (1991), Khothari et al. (2005) and Dechow and Dichev (2002) models are generally employed as a proxy for accrual quality. (Examples of recent studies that used modified AQ models include: Kusunadi et al., 2022; Luo, 2022; Eloff and Steenkamp, 2022; Zadeh et al., 2022, etc.).

The multiplicity of the models used to estimate AQ could be attributable to the diversity and complexity nature of EQ (as discussed in Section 2) and there seems not be a definite or superior models that measure best AQ.

#### 4. EARNINGS QUALITY LITERATURE DURING THE COVID-19 PANDEMIC

The COVID-19 pandemic has interrupted business activities and all firms around the world have been affected either directly or indirectly by the pandemics (Gould and Arnol, 2020).

Given the impact of the pandemic on business entities, investors and other stakeholders 'demand for high quality accounting information is inevitable to a greater extent (Gould and Arnold, 2020).

In this regard, the literature has started to examine how the pandemic affect the quality of financial reports. Specifically, studies (Ozili, 2021; Xiao and Xi, 2021; Usheva and Vagner, 2021; Maheen, 2021; Cui et al., 2021) on EQ during the COVID-19 pandemic have mostly focused in the area of earnings management. These studies have shown that, there is a high tendency for firms to use accounting practice to manipulate financial performance in order to cope with the difficult economic situation. In fact, earlier studies (e.g., Pavlatos and Kostakis, 2015; Huizinga and Laeven, 2012; Arnold, 2009) have shown that during difficult economic condition such as the 2008 financial crisis, firms employed accounting techniques to distort financial reporting. This evidence seems also to be noticed during the COVID-19 pandemic. For instance, Ozili (2021) reported that firms used accounting practices such as fair value, income smoothing, to reduce the effect of the pandemic on firms 'performance. Lassoued and Khanchel (2021) found that in Europe firms attempt to manipulate earnings to avoid reporting loss during the pandemic period. In Xiao and Xi (2021), it is shown that, during the COVID-19 pandemic, firms with high corporate social responsibility are less likely to manipulate financial reports as compared to firm with low corporate social responsibility. Based on these findings, it can be inferred that corporate social responsibility mitigate earnings management.

Taken a different path, the study of Cui et al. (2021) examined the relation between conservatism accounting and stock return during the COVID-19 pandemic. The study revealed that firms

which report more conservatively, display a lower decrease in stock return during the pandemic as compared to firms with less conservatism practice. Cui et al. (2021) further showed that firms with high level of information asymmetry enjoy the beneficial role of accounting conservatism during the pandemic period.

The study of Usheva and Vagner (2021) showed that firms use their savings to cope with the pandemic instead of trying to manage earnings.

In general, the COVID-19 pandemic has become an emerging area of recent works on EQ. The literature reported on the impact/effect of COVID-19 on the quality of financial reports. There is evidence of firm's tendency to use accounting practices in an attempt to misrepresent financial reports during the pandemic period. However, factor such as corporate social responsibility, corporate governance, and disclosure policy limit earnings management practice.

It is known that the COVID-19 pandemic has disrupted the business and the economic word wide. But the extent to which firms have used accounting practices opportunistically and it impact on capital market is still unknown.

#### 5. AVENUES FOR FUTURE RESEARCH ON EARNINGS QUALITY

The literature on fair value accounting and EQ has produced mixed evidence. This mixed evidence is attributable to the type of capital market in which the study is conducted and or the firm operate. The literature argued that in less liquid market where there is a weak legal enforcement, managers exploit the flexibility or discretion in fair value estimate opportunistically, as such fair value led to the decrease in EQ. What is lacking from previous studies is the quantification of the level of discretion which is considered to be acceptable. Future studies may thus investigate how much discretion is acceptable in the application of fair value and retest the impact of fair value on earnings quality. This avenue of future study will require interview with standards setters, to ascertain the level of discretion which is allowable/tolerable in financials reporting.

In addition, future studies could also assess whether the new accounting standards such as fair value accounting are applied as intended in developing nations and their effect on EQ, since prior studies have found that there are a lot of challenges in the application of new accounting standards in developing markets and the results obtained from developing nations are contrary to the one obtained in developed nations. This raise another question: should developing nations modified accounting standards to their local context and environment? or should they continue to follow the standards applicable by developed nations? The application of fair value accounting required effective market in which the price of a security can easily be determined, this is less likely to be the case in developing markets. In this regard, various studies (e.g.: Enomoto, 2020; Takacs et al., 2020; Ahmed et al., 2013) argued that the effectiveness of the application of new accounting

standards depends on the institutional environment of a country. In country where there is strong legal enforcement, the standards will produce intended outcomes.

In the reviewed literature, it is noted that studies on fair value and EQ have extensively focused on financial assets. However financial assets are not the only items in financial statements, in which fair value is applicable. The application of fair value on items other than financial assets are relatively less investigated. As such, another direction for future research could be to consider other assets such as investment properties and examine how fair value of investment property impact EQ. In fact, Fair value of investment properties also required the exercise of judgment by managers (Bandyopadhyay et al., 2017) and this could impact on earnings quality.

Although the current literature has taken into account innate and discretionary EQ, it is still not clear whether the models used to separate these two components of EQ are effective. In fact, there are debate in the literature concerning the appropriateness of discretionary accrual models to properly captured EQ. In addition, there is also endogeneity and construct validity issues in research design in EQ studies (Ozili, 2016; Defond, 2010; Dechow et al., 2010). In an attempt to address these issues, researchers sometime have performed robustness test to validate their findings, but does this solve the problem of appropriateness of the model, endogeneity and construct validity? This question is still not answered in the literature and could potential be an arena for future study.

Finally, corporate governance is identified as a factor that limit management's opportunistic behaviour (Takacs et al., 2020; Fan et al., 2020). Future research may consider corporate governance as a moderating factor that influence the association between fair value and earnings quality.

## 6. CONCLUSION

This paper provided a review of EQ research in order to point out if the challenges identified in previous studies more than a decade ago have been resolved in the literature. Firstly, the review presented the historical background on EQ by discussing factors that have contributed to the growth in EQ research up to date. The review also presented a comprehensive description of the concept of earnings quality and showed that there are many definitions of EQ and each definition is tailored according to each user context.

Secondly, the review discussed fair value accounting and the measurement of AQ, as two advancements in earnings quality research that have received a lot of attention since the publication of Defond (2010) and Dechow et al., (2010). It is revealed that the impact of fair value accounting on EQ provided conflicting results, suggesting that the knowledge in this area is inconclusive and need future investigation. Furthermore, the literature has developed various models to measure AQ as well the models used to separate EQ into its innate and discretionary components. However, the efficacy of these models in measuring what they intent to, are still debatable in the literature.

Thirdly, a commentary on the state of EQ research during the COVID-19 pandemic is also discussed. The study revealed that the COVID-19 pandemic is depicted as an emerging area of investigation in EQ literature, with few evidence reporting its effect on financial reporting.

Finally, potential areas of future investigation are suggested, including: assessing the acceptable level of discretion in fair value accounting, research design issues associated with the measurement of accrual quality models and corporate governance effect on the association between earnings quality and fair value accounting.

Given the importance of accounting information in capital market, research in the field of EQ will continue to evolve and will always be an endless field of research in accounting and finance literature.

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