Financial Reporting Quality Measurements:
A Review Paper

Ninjin Bolortsogoo[1], Battuya Demberel[2]

Abstract

The measurements related to financial reporting quality and disclosure are versatile in association with the research objective, the definition of financial reporting quality and the determinants of quality. The paper reviews financial reporting quality measurements within the scope of the Conceptual Framework of International Financial Reporting Standards. The purpose of the paper is to facilitate young Ph.D. students and researchers to form a solid and systematical understanding of financial reporting for their future research. The main contribution of the paper in the research field is the paper attempted to: 1) review and analyze the existing accounting literature in the theoretical framework; 2) On the basis of theory, current and future trends in accounting research is illustrated.

Keywords: financial reporting, quality, measurement, literature

[1] PhD Candidate, Faculty of Business and Economics, University of Pecs
    Email: bolortsogoo.ninjin@pte.hu
[2] Business School, NUM
    Email: de.battuya@num.edu.mn

Introduction

There is a vast literature on financial reporting quality in relation to it's macro and micro level importance. The quality research has been in the interest of accounting researchers for more than several decades. However, the measurement of quality has been a tough task for accounting scholars. Francis *et al.* (2008) emphasize that the alternative constructs chosen for quality definitions will effect on differences in research question and measurement in financial reporting. The financial reporting quality has been variously defined by researchers in association with the absence of general accounting theory (Soderstorm & Sun, 2007; Francis *et al.*, 2008; Gaynor *et al.*, 2016). Dechow & Schrand (2004) note that the quality in financial reporting is subjective as the meaning can be varied by different financial statement users. Earnings quality and its measurements are studied in great extent as it is the core indicator of the financial reporting quality (Francis *et al.*, 2008). Ewert & Wagenhofer (2011) state the earning quality is the reflection of a firm's accounting system effectiveness. Vincent (2004) denotes that generalizing the term of earning quality is difficult due to the dissimilarities in every firm and country contexts.

The conceptual framework set by standard setters can be viewed as a structured accounting theory (Godfrey *et al.*, 2010). According to the accounting standard setters, namely International Accounting Standard Board (IASB), Financial Accounting Standard Board (FASB), Accounting Standards Board in the United Kingdom (ASB), and Australia Accounting Standard Board (AASB), financial reporting quality (FRQ) means the financial statements presented True and Fair information about an entity's economic performance and financial position (Herath & Albarqi, 2017; Tang *et al.*, 2012). As a result of un-exhaustive nature of the FRQ definition, hereafter FRQ will refer the same meaning as standard setters and Conceptual Framework set by IASB is discussed for

coming sections. And the literary review will be based on the capital market perspective in consideration of mandatory adoption of International Financial Reporting Standards (IFRS).

The paper aims to review the literature in the field of FRQ measurement as the results of empirical papers in the field are fiercely influenced by the measurements that the scholars use and the application of those papers are affected by the variety in measurements. The paper starts with introduction section. The review methodology is discussed in the subsection of introduction. In the second section, the literature related to FRQ measurements will be discussed. And the paper ends with concluding remarks, complemented with future research area.

Review methodology

In the accounting research, bottom-up approach has been greatly used among the researchers. Bottom-up approach is common in western philosophy where parts of the systems are studied and then the interactions are examined (Srinidhi, 2013). There are some attempts by researchers to determine the generic factors influencing on financial reporting quality. However, the number of deductively researched works in the field was limited, which can be linked to the absence of general theory in accounting (Schroeder *et al.*, 2016; Belkaoui, 2004). In conjunction to the research nature in accounting and resource availability, inductively studied works will be greatly used in the paper. However, the other available resources in FRQ used deductive approach will be appreciated and analyzed.

For the purpose of finding relevant studies, the following keywords are used: financial reporting quality, theory, practice and methodology, measurements. However, as a result of different wordings used by different authors and which are equitably important for the topic, the literature review search is not limited by the above. For instance, studies used the wordings such as accounting quality

and earnings' quality which are substituting FRQ or research interest is equitably important; wording measurement is replaced by metrics, proxies in some studies.

Measurements in Financial Reporting Quality

Depending on the research objectives and determinants of financial reporting quality, various proxies and measurements are applied by scholars. There are some comprehensive reviews on measuring earnings quality by Dechow *et al.* (2010) and Ewert & Wagenhofer (2011), and the authors have shown the pros and cons of various earnings quality metrics as well. In the extent of applying IFRS and its conceptual framework, measurement studies focus on different facets of FRQ (Gaynor *et al.*, 2016). In prior literature, Beest *et al.* (2009) and Kythreotis (2014) studies explicitly set IFRS conceptual framework as their base FRQ measurements. In Beest *et al.* (2009), they have operationalized qualitative characteristics and produced 21 item index. Kythreotis (2014) concentrated on the two core characteristics and measured the subjects by developing two alternative methods which are based on both accounting and market data, and the second method used R2 of regression.

In this section to address the FRQ measurement, the techniques are reviewed in relation to qualitative characteristics set in connection to IFRS Conceptual Framework 2018 (CF). CF sets 6 collective qualitative characteristics dedicated to provide quality FR which include two core (relevance and faithful representation) and four enhancing characteristics (comparability, verifiability, timeliness and understandability). The section continues by discussing measurements associated with core and enhancing characteristics separately and ends by other general measurement methods demonstrated in existing literature.

Measurements for core qualitative characteristics

Relevance. CF states that the relevance of information is presumed as it has predictive and confirmatory value. The financial statements are subject to relevance quality if the information facilitates the investors to value the firm and enables to predicting the share prices (Barth *et al.*, 2001). Palea (2013) notes that value relevance research is the most used characteristic by authors in measuring the FRQ as it associates with measuring the market efficiency. Accruals quality measurement suggested by Dechow & Dichev (2002) is also one of the widely used metrics to measure the predictive and confirmatory ability of financial information. The authors used past, present and future operating cash flows in correspondence with short term accruals.

Holthaussen & Watts (2001) discuss the approaches on value relevance study in consideration of three categories of measurement, including Relative association studies; incremental association studies; and marginal information content. All three approaches address stock market values in reference to accounting numbers. The relative association studies are useful in consideration of different accounting standard sets and explaining the bottom line accounting number in relation to stock market value. Incremental association differs from relative association study as it concentrates on specified variables and commonly used in accounting adjustments as per converting into different accounting standard. Marginal information content study tests if certain accounting number adds value to investors' decision making through the stock price changes, and which usually uses event studies.

Faithful representation. According to CF, the financial information is deemed to be faithfully represented if it is complete, neutral and free from error. Gaynor *et al.* (2016) mention that discretionary disclosure has been used

as a measurement of completeness. The concept of discretionary disclosure was initially introduced by Verrecchia (1983) and he proposes that managers make a biased decision on discretionary disclosure depending on the costs. In her doctoral dissertation, Low (1996) evidences that higher the proprietary cost, lower the FRQ. She has applied advertising, and research and development expenditures, deflated by net sales as a proxy to measure the proprietary costs. In relation to financial reporting disclosure, the scholars find that there is management discretion over the mandatory disclosures alike in voluntary disclosure (Wallace & Naser, 1995; Hodgdon, *et al.*, 2008).

Bolortsogoo (2017) reveals the mandatory disclosure is not fulfilled by listed firms when there is lack of sanctions, under-development in financial reporting institutions which makes the FSs less informative in the extent of completeness. As outlined in Gaynor *et al.* (2016), neutrality and errorless reporting are addressed through identifying intentional and unintentional errors. Regardless of the intention, error identification study can be executed through restatement (Wang & Wu, 2011; E&Y, 2015; Gaynor *et al.*, 2016; Bolortsogoo, 2017). However, as a result of the inability to differentiate the intention of the management, restatement measurement has been criticized by researchers as an incomplete measurement of FRQ (Beest, *et al.*, 2009; Dechow *et al.*, 2010). Those intentional errors can be studied using litigation database or enforcement actions of the jurisdictions.

Also, earnings management (EM) studies are greatly interested by researchers which reflect the intentional manipulation by the management. Albeit, Gaynor *et al.* (2016) emphasize that this study can only demonstrate the probability of the manipulation through selected metrics due to difficulties in observation. The research in the field of EM and FRQ has been studied from different angles. Jiraporn *et al.* (2006) provide a neutral result on EM effect on FRQ.

As discussed in Ewert & Wagenhofer (2011), EM can be measured through earnings smoothness of which smoother the earnings indicate lower the FRQ. In the authors' work, the smoothness is explained through the correlation between discretionary accruals.

Measurements for enhancing characteristics

Measurements relevant to the remaining four qualitative characteristics under CF are discussed interactively in this section. Prior literature denotes that the enhancing characteristics individually cannot provide useful information and generally complement to the core characteristics (Kythreotis, 2014). And the studies generally apply the characteristics interactively.

Comparability measurement. Comparability is one of the key drivers of applying International Financial Reporting Standards (IFRS) in different jurisdictions and which will enable unbiased judgment and decision making for international investors. There are limited number of studies which directly measure comparability according to Cascino & Gassen (2015). Cascino & Gassen (2015) study the FRQ with the specific focus on comparability effect of mandatory adoption of IFRS. To measure the comparability, the authors produce a model which apply two proxies suggested by De Franco *et al.* (2011) and information transferability. In the study, country-level factors were assumed under ceteris paribus and firm-level influences have been used in the measurement proxy. Their findings reveal that comparability is limited by the level of IFRS compliance by the firms. Furthermore, compliance by the researched 29 countries' listed companies is varied according to its country and firm-level compliance determinants.

There are some other indirect studies which measure the comparability of financial information among different countries. Wang & Wu (2011) and Yip & Young (2012) find comparability increases after IFRS adoption under the information transferability.

According to Beest *et al.* (2009), financial ratios and interpretations facilitate to comparability measurement as company's current performance start to speak about the fact when it is compared to the past performance and industry competitors' results.

Verifiability measurement. CF states verifiability supports the faithful representation of financial reporting through ensuring the information about the economic performance of the firm. The external audit is the core function that assures the verifiability of FSs. Brown *et al.* (2014) note that auditors' ability to influence on quality FR depends on the effectiveness. Albeit, been assured by auditors does not directly mean the firm has high-quality FR. Carcello & Nagy (2004) and Bratten *et al.* (2015) suggest industry specialist auditor provides higher FRQ. Auditor rotation and short term audit engagement have an adverse impact on FRQ as a result of decreased expertise about a certain client (Lin & Lin, 2008). Gaynor *et al.* (2016) suggest financial statement preparers' incentive also influences on auditor selection as if preparer wishes to issue low-quality financial reports then they will hire low-quality auditors.

Timeliness measurement. "Timeliness means having information available to decision-makers in time to be capable of influencing their decisions" (IFRS Foundation, 2010b). In reference to timeliness concept, timely loss recognition is massively studied in the research[6] (Ball *et al.*, 2003). As noted in Dechow *et al.* (2010), for timely loss recognition, the 'tendency-to-reverse' measure suggested by Basu (1997) is increasing among researchers. The authors predict that the more timely recognition of loss implies greater FRQ. Timely loss recognition studies are conjunctively studied with conservative accounting research.

Understandability measurement. Clearly and concisely classified, characterized and presented information provides more understandability to the FS users who hold reasonable business and economic knowledge (IFRS Foundation, 2010b). In Beest *et al.* (2009), to measure the understandability characteristic annual report presentation; notes to balance sheet; information clarification through graphs, tables; simplicity level of jargons and language in annual reports and glossary attached to the report are reviewed. Understandability is measured by the proxies of informativeness and disclosures as it is an unobservable characteristic. ICAEW (2016) states that a firm's information environment is not only limited by financial statements. According to Holm & Scholer (2010), Beyer *et al.* (2010), Beuselinck *et al.* (2013), there are two broadly grouped financial disclosures such as mandatory and voluntary disclosures. Depending on the classification, the related measurements differ (Bolortsogoo, 2018). Urquiza *et al.* (2010) synthesize that self-constructed item based index is the mostly applied measurement method in disclosure literature.

Measurements in relation to country-level FRQ determinants

In connection to the variety in FRQ measurements, this section attempts to review how specific measurements are applied in research works which are connected to country-level FRQ determinants. The FRQ measurements applied by the researchers are varied by the quality determinants considered in the research. The determinants are broadly classified into country and firm-level (Cascino & Gassen, 2015). In this section, the measurements are reviewed in relation to country-level factors. However, in the future research, it is essential to review the literature on measurements in relation to firm-level determinants.

In Dechow *et al.* (2010), the metrics used for cross country studies are analyzed in the light of decision usefulness. They find conflicting results among the countries, using earnings management proxies including smoothness and accruals. The variations in results are caused from differences in

smoothness measurement and differences in institutions. Ewert and Wagenhofer (2011) study earnings quality measurements from the perspective of informativeness of the reported earnings on the basis of developing a rational equilibrium model. Authors take account the factors including 1) managerial incentives, 2) operational risk knowledgeable to the managers in privately and 3) accounting noises. Their result shows value relevance metric followed by persistence provide a positive association with earnings quality where the other metrics including predictability, smoothness and discretionary accruals showed inconsistency.

Ball *et al.* (2003) apply timely loss recognition in measuring four Asian countries FRQ using R2 in regression. They concentrate on the institutional differences in law origin (code or common law). Leuz *et al.* (2003) choose earnings management proxy for measuring 31 countries' FRQ and generated four measurements to EM: 1) Insiders' ability to smooth reported earnings through accruals measured by the country's median ratio based on firm-level standard deviations of operating earning divided by operating cash flows; 2) Correlation between changes in accruals and operating cash flows to measure earnings smoothing; 3) Discretionary accruals based measurement using country's median of absolute values of firms' accruals divided by operating cash flows; 4) Possibility of managers reporting discretion in small losses, small loss avoidance is measured by the small profits scaled by small losses.

Afterward, Tang *et al.* (2012) work was dedicated to measure the country level FRQ using six indicators and they produced the FRQ index method. The produced measurement was partly similar to Leuz *et al.* (2003), however, the novelty of Tang et al. (2012) was they enriched the measurement with auditing data. The six indicators included: 1) Loss avoidance ratio (same as Leuz et al., 2003 small loss avoidance ratio); 2) profit decline avoidance ratio; 3) Accruals ratio (similar to Leuz et al., 2003); 4) Qualified audit opinion ratio; 5) Non big 4

auditor ratio; 6) audit fee ratio. In the study, 38 large capital markets' listed companies between 2000 and 2007 were observed. The authors have taken account both country and firm-level factors that have an impact on FRQ. And key explanatory variables were investor protection, legal enforcement, firm size, financial leverage, profitability, and firm growth.

Brown *et al.* (2014) constructed 15 items index to capture country level enforcement differences in financial reporting through the proxies of audit performing environment and activities of enforcement bodies at the country. Brown et al. study covered 51 countries data for the years 2002, 2005 and 2008. As a result of country-level wide mass covered data demand, the authors used publicly available data disclosed by International Federation of Accountants (IFAC), World Bank and national securities regulators. And the index items are selected in conjunction with each country.

Conclusion

The paper reviews literature on measurements of financial reporting quality in the extent of IFRS adoption. Ewert & Wagenhofer (2011) note that appropriateness of quality metrics are varied depending on the aim of the research and the factors influencing on the quality. As a result, the explanatory power of proxies on measurements varies. The determination of single FRQ measurement is hard to be achieved (Landsman, 2003; Ewert & Wangenhofer, 2011; Fanani, 2011). Therefore, the studies select different quality constructs and factors. However, FRQ can be at the interest of macro and micro level. In the macro level, for policy setting purpose, the measurement of the quality is vital. On the basis of existing literature, index methodology was dominating for the country level FRQ measurement. The research field still in the development phase and there are many areas for further research: 1) factorial analysis needs to be broadened by addressing both of the institutional (country level) and individual firm factors and their

interrelationship can be further studied; 2) The country level FRQ measurement needs to be further developed by considering both quantitative and qualitative aspects of the financial reporting; 3) Also the FRQ research can be reviewed in relation to compliance with accounting standards and further analyzed by principles compliance and disclosure compliance, and each of the field will lead to differing research flow.

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Acknowledgement