MEASURING EARNINGS QUALITY: EVIDENCE FROM NEW ZEALAND

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Abstract

We utilize two basic approaches to measure the quality of earnings which control two different dimensions of earnings management. The research design is structured primary on the basis of calculating two different measures of the quality of earnings on the industry level and on the company level. We calculate earnings quality for New Zealand public firms from the OSIRIS (http://www.osiris.com) database for 2004-2007. This research concludes that various stakeholders should apply more than one measure for the quality of earning in order to have strong evidence about the level of quality before taking any corrective action or making any decision related to that company. If one company is having low quality of earning according to one technique and high quality of earnings according to another, the stakeholders cannot have a final conclusion about that company and they need more investigations and analysis to assess the quality of earnings.

Keywords: Earnings Quality, Accounting Information, Financial Analysts

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1. Introduction

The advent of corporate scandals at the beginning of the 21st century involving high profiled corporate citizens such as Enron and WorldCom in the United States and HIH in Australia has led to an increased call for more governance. This focus on good governance is especially strong from parties such as investors and shareholders who each have a financial stake in the on-goings of the company. Concerns were raised with regards to the litany of lies and deception perpetrated by those with authority from the higher echelon of companies that knowingly provide misleading "robust" information with regards to the state of the company's financials. In the Enron scandal, the fact that Arthur Anderson – the then largest professional services firm in the world was willing to go along with the upper management of Enron in concealing its wrongdoings has resulted in a public outcry for better mechanisms within companies to protect shareholder wealth.

The purpose of this paper is to empirically investigate the earnings quality in the context of New Zealand. In earnings management literature shows researchers usually design their research question as whether and when earnings management takes place. Earnings management is a form of earnings manipulation that is likely to reduce the quality of earnings that interference with the estimation process to misrepresent reality is, by definition, poor quality[1]. This relation is empirically established in the literature (Francis and

[1] Managers have some degree of flexibility and discretion in reporting their financial performance and they may use it either opportunistically to manage earnings (Christie and Zimmerman 1994) or they may use it to communicate private value-relevant information about the firm's future performance (Jones 1991; Healy and Palepu 1993). However, much of the extant literature finds that earnings management is carried out with the intention of either misleading financial statement users or of biasing contractual outcomes that depend on accounting earnings. Recent studies have provided evidence of income-increasing opportunistic earnings management related to initial public offerings (Teoh et al. 1998a; Teoh et al. 1998), seasoned public offerings (Teoh et al. 1998b), stock financed acquisitions (Erickson and Wang 1998), meeting analyst earnings expectations (Payne and Robb 2000; Burgstahler

Wang 2008; Hope et al. 2008; Wang et al. 1994; Ali and Hwang 1995; and Cheng et al. 1997). When mangers manage earnings for opportunistic purposes, accounting earnings become a less dependable measure of a firms‟ financial performance. Accordingly, it is justifiable to use earnings management as an indicator of the quality of earnings.

This research presents an empirical study on using two different approaches of measuring the quality of earnings on different industry. The notion is; if there is a complete consistency among the two measures, a general assessment for the quality of earnings (high or low) can be reached and, if not, the quality of earnings is questionable and needs different other approaches for measurement and more investigations and analysis.

The results show that different approaches of measuring the quality of earning lead to different assessment, and one industry or one company can not be labelled as having low or high quality of earning based on the result of one approach only. The results also suggest that the stakeholders before making any financing, investing decision or taking any corrective action have to use more than one approach to assess the quality of earnings.

The rest of the paper is organized as follows. The next section begins with accounting information and earnings quality and we than develop our model in Section 3. In Section 4 we describe the sample selection procedure and results and section 6 we present our conclusion.

2. Accounting information and earnings quality

Cheng et al (2005) document that significant difference in impact on earnings from the choice of treatment of transition obligation; the accounting choice has no significant impact on the total value relevance of earnings and book value. When immediate recognition method is applied, investors ignore the one time change of transition obligation, and rely more on book value in the valuation of a firm. However, when prospective recognition method is applied, both earnings and book value are value-relevant in the adoption year and also in the subsequent year. The value-relevance stream of research is based on the premise that if information is useful, investors will adjust their behaviour and the market will respond quickly through changes in share prices. Therefore, information is considered relevant if share returns are associated with the release of the information. The quality of accounting earnings is based on the understanding that accounting earnings, as a performance measure, are value relevant (e.g. Beaver 1998; Lev 1989). There has been significant range of studies, since Ball and Brown (1968), empirically showing the importance of quality of accounting earnings as value-relevant information for investors (e.g. Easton and Harris 1991; Collins and Kothari 1989). A primary research design consideration for value relevance research is the selection of the model used in the tests. Liner information dynamics model (e.g. Ohlson model 1995) expresses firm value as the sum of the book value of equity and the present value of future abnormal earnings (Ota 2001). Thus, if share prices are a linear function of only book value of equity and expected abnormal earnings, then share returns are a linear function of level of earnings and change of earnings. Earnings level, ceteris paribus, is derived from change in book value and change in earnings is derived from the movement of earnings level from period t_0 to t_1. Thus, the Easton and Harris (1991) returns model is a measure of the change in price from period t_0 to t_1 relative to the change in the Ohlson (1995), liner information dynamics model.

The value-relevance of a particular firm's accounting earnings depends on the ability of current accounting earnings to facilitate the prediction of future returns by predicting future earnings and cash flows. Quality earnings are price informative, because empirical evidence shows that reliable measures of future earnings and cash flows (i.e. permanent earnings) provide quality accounting information (Cheng et al 1996 & 1997). Although the market places greater emphasis on quality earnings (Freeman and Tse 1992), it is hard for shareholders to observe the quality of earnings. Alternatively, shareholders use cues to guide the assessment of earnings quality. The cues should be those that affect the actual earnings quality.

and Eames 2006), meeting management forecasts (Kasznik 1999), and avoiding earnings decreases and losses (Burgstahler and Dichev 1997). Examples of settings leading to income-decreasing earnings management include management buyouts (DeAngelo 1988; Perry and Williams 1994), executive compensation (Healy 1985; Holthausen et al. 1995), and appeals for import relief (Jones 1991). This body of research has found convincing evidence of opportunistic earnings management in settings where strong incentives to manage earnings exist.

Current generally accepted accounting principles provide sufficient latitude in allowing firms to selectively use principles and procedures in communicating firm performance to stakeholders. This is important because of asymmetric informational advantage over other users of accounting information. Therefore, they can use their knowledge to select procedures, estimates and disclosures to suit the firm's short-term goals often to the detriment of long-term ones. This could potentially decrease accounting as a relevant and credible form of communication. Opportunistic use of judgment also creates opportunities for "earnings management" in which managers choose reporting methods and estimates to bias accounting numbers to extract private benefits and/or to mask true firm performance.

Zarowin (2002) applies Leuz et al (2001) framework to examine whether income smoothing makes stock price more informative. He uses two smoothing measures, namely (i) correlation between changes in accruals and cash flows, and (ii) dispersion in net income (S.D. of net income) divided by dispersion in cash flow (S.D. of cash flow). He than regress current stock returns on lagged, current and future earnings (cash flows) and find that stock returns of firms with more smoothing tendency capture more information about future earnings (future cash flows). However, Zarowin's study only examines earnings smoothing measures does not consider the impact of earnings management measures. On the other hand Habib (2004) consider both (smoothing and discretion) measures of earnings management to empirically examine the association between the quality of earnings information communicated to investors and its impact on value relevance of accounting information in the context of Japan. Results based on 5,318 consolidated firm-year observations over 1992-1999 show that, both earnings management measures and aggregate earnings management measures (combination of both earnings smoothing and earnings management measures) are significantly negatively associated with the combined value relevance of book values of equity and earnings (combined model) and value relevance of earnings (earnings model).

3. Model development

There is no established generally accepted approach to measuring earnings quality. In this study we utilize two basic approaches to measure the quality of earnings which control two different dimensions of earnings management.

The first approach is focusing on the variability of earnings based on the idea that managers tend to smooth income because they believe that the investors prefer smoothly increased income. The notion of this approach is the relative absence of variability – is sometimes associated with higher-quality earnings. Leuz et al. (2003) measures the variability of earnings by calculating the ratio of the standard deviation of operating earnings to the standard deviation of cash from operations (smaller ratios imply more income smoothing).

The second approach is focusing on the ratio of cash from operation to income, this measuring of earnings quality is based on the notion that the closeness to cash means higher quality earnings, as mentioned by Penman (2001), this is the simplest technique to measure the earnings quality.

The model will use these two approaches to measure the quality of earnings, the notion is; the result of each measure will be different based on the type of industry, market capitalization, number of employees, and many other factors. If one industry (company) is showing low quality of earnings according to the two approaches, that will confirm the existence of earnings management in that industry (company). On the other hand if there is no consistency among the three measures for one industry or company, the quality of earning will be questionable and needs further investigations and analysis. Finally, if there is consistency among the two measures for one industry (company) that will confirm that the accounting information represents the real economic performance of the industry without any interference from the management.

Table I. Presents the two-dimension model.

Leuz et al (2003) approach	Penman (2001) approach
Quality of earnings is measured by variability of earnings which is equal to the standard deviation of operating income divided by the standard deviation of cash flow from operation. The smaller the ratio the lower the quality of earnings.	Quality of earnings is measured by the ratio of cash flow from operation divided by the net income. The smaller the ratio the higher the quality of earnings

4. Sample and statistical results

The research design is structured primary on the basis of calculating two different measures of the quality of earnings on the industry level and on the company level. The analysis is directed at testing whether there is consistency among the two measures for one industry or one company in order to have strong evidence about whether the quality of earnings is low or high. The quality of earnings will be marked as questionable if there is no consistency among the two measures. In this case, the quality of earnings measures needs more analysis and investigations and may be in some cases different techniques to confirm whether it is high or low.

We calculate earnings quality for New Zealand private and public firms from the OSIRIS (http://www.osiris.com) database for 2004-2007, the available complete data was for only 129 companies. Table II presents classification of the companies according to their activities.

Table II. Industrial classification

Industry	**# Companies**	**% of sample**
Agriculture & livestock	10	7.75
Financial services	12	9.30
Investment	08	6.20
Manufacturing	27	20.93
Power gas oil and mining	07	5.43
Service	51	39.54
Technology	14	10.85
Total	**129**	**100**

Table III represents the results of the empirical study for the industry level. As shown in table III, there is a consistency among the two measures of the quality of earnings for the financial services companies, the manufacturing companies, the power gas oil and mining companies and for the technology companies. For the full same, the agriculture companies, the investment companies, the service companies quality of earnings is questionable and cannot be assessed based on the these two measures.

Table III. The empirical study results: Industry Level

Industry	N	Leuz et al (2003)		Penman (2001)		EQ
		Measure <1 L >1H	EQ	Measure <3 H >3L	EQ	
Full sample	129	5.02	H*	15.97	L	Q***
Agr. &Live	10	9.30	H	10.61	L	Q
FinSrvices	12	.14	L**	4.87	L	L
Investment	08	.92	L	1.81	H	Q
Mfg	27	1.40	H	1.63	H	H
Gas Oil	07	1.11	H	2.97	H	H
Service	51	1.22	H	-2.31	L	Q
Technology	14	.322	L	-4.38	L	L

* High quality earnings;** Low quality earnings;*** Questionable earnings

Table IV presents the empirical study results for the company level. As shown in Table IV, the Agriculture & Livestock industry has one company (10 percent) with high quality of earnings, three companies (30 percent) with low quality earnings, and six companies (60 percent) their quality of earnings measure is questionable and cannot be assessed based on this model and needs further investigation and analysis.

Financial services industry, there are four companies (33 percent) with high quality earnings, six companies (50 percent) with low quality of earnings, and two companies (17 percent) with questionable measure for the quality of earnings.

Investment industry (property investment mainly), there are two companies (25 percent) with high quality of earnings, two companies with low quality of earnings, and four companies (50 percent) their quality of earnings is questionable.

Manufacturing industry, there are 15 companies (56 percent) with high quality of earnings, two companies (7 percent) with low quality of earnings, and ten companies (37 percent) with questionable quality of earnings.

Power gas oil and mining industry under Leuz et al (2003) approach two companies (29 percent) with high quality of earnings on the other hand Penman (2001) approach six out of seven companies with high quality of earnings. Finally seven companies in this industry produced questionable quality of earnings.

Service industry, there are twenty companies (38 percent) with high quality of earnings, five companies (10 percent) with low quality of earnings and twenty seven companies (52 percent) with questionable quality of earnings.

Technology industry five companies (38 percent) with high quality of earnings, five companies (38 percent) with low quality of earnings, and three companies (24 percent) with questionable quality of earnings.

Table IV. The empirical study results: company Level

No.	Symbol	Leuz et al (2003)		Penman (2001)		Overall EQ
		Measure	EQ	Measure	EQ	
Panel A: Agriculture and livestock companies						
1	AFL	.28	L	3.04	L	L
2	DGL	5.81	H	-.56	L	Q
3	FCGL	4.87	H	4.30	L	Q
4	LICL	.69	L	2.87	H	Q
5	NZW	.03	L	.82	H	Q
6	OBM	1.58	H	2.23	H	H
7	SCG	.17	L	2.10	H	Q
8	SKI	.54	L	1.5	H	Q
9	SFF	.63	L	8.26	L	L
10	TL	.01	L	-1.84	L	L
Panel B: Financial service companies						
1	BFL	.10	L	-6.67	L	L
2	CHL	.95	L	.76	H	Q
3	LGL	.32	L	-2.63	L	L
4	NCIL	1.75	H	-.46	L	L
5	NZX	2.52	H	1.90	H	H
6	PWL	.37	L	.91	H	Q
7	PFGL	.41	L	9.93	L	L
8	PGCL	3.28	H	1.37	H	H
9	RL	.05	L	5.23	L	L
10	SEC	1.19	H	2.18	H	H
11	WPL	.31	L	-.14	L	L
12	WEL	1.29	H	.89	H	H
Panel C: Investment companies						
1	CPNZ	.88	L	1.16	H	Q
2	CDL	.59	L	.76	H	Q
3	KIPT	2.48	H	.57	H	H
4	NPT	1.91	H	4.61	L	Q
5	PIL	1.82	H	.04	H	H
6	RPL	.35	L	9.04	L	L
7	RHL	.80	L	1.72	H	Q
8	TTPL	.06	L	-3.17	L	L
Panel D: Manufacturing companies						

1	BLIS	.85	L	.88	H	Q
2	B-ZL	.66	L	.10	H	Q
3	CCL	.65	L	1.30	H	Q
4	CGL	1.51	H	.54	H	H
5	CMCL	.55	L	1.13	H	Q
6	CL	.23	L	-1.77	L	L
7	EGL	3.26	H	.90	H	H
8	FPH	.95	L	1.96	H	Q
9	FBL	1.81	H	1.34	H	H
10	HHL	2.12	H	.91	H	H
11	IL	1.36	H	2.05	H	H
12	LPCL	1.59	H	1.59	H	H
13	MFL	2.55	H	.77	H	H
14	ML	1.26	H	1.03	H	H
15	MLC	.83	L	3.39	L	L
16	NPCL	2.99	H	.16	H	H
17	NIL	.43	L	1.38	H	Q
18	PTL	.87	L	1.13	H	Q
19	SL	5.13	H	1.03	H	H
20	STL	.47	L	1.90	H	Q
21	SHL	1.29	H	.90	H	H
22	SPNZ	6.04	H	1.89	H	H
23	STHL	6.34	H	1.66	H	H
24	TAL	2.76	H	1.34	H	H
25	UNL	.81	L	1.30	H	Q
26	WDTL	1.08	H	1.03	H	H
27	WTL	.96	L	.48	H	Q
Panel E: Power gas oil and mining						
1	CEL	.81	L	1.72	H	Q
2	HGNZ	.87	L	.51	H	Q
3	HEDL	.98	L	1.54	H	Q
4	NZOG	2.77	H	-1.53	L	Q
5	NZRC	.79	L	2.06	H	Q
6	TPL	.80	L	1.53	H	Q
7	ZML	2.43	H	.50	H	Q
Panel F: Service companies						
1	A2CL	.97	L	.53	H	Q
2	AHGL	1.68	H	1.93	H	H
3	ANZL	9.84	H	-0.86	L	Q
4	AWFG	2.28	H	1.27	H	H
5	AFL	.67	L	24.63	L	L
6	AHHL	.68	L	2.83	H	Q
7	BAHL	.42	L	.89	H	Q
8	BSPG	5.34	H	2.97	H	H
9	BGL	4.05	H	1.33	H	H
10	BIL	5.96	H	-1.61	L	Q
11	CGL	.53	L	-1.05	L	L
12	CMS	1.49	H	1.14	H	H
13	CGL	1.02	H	1.67	H	H
14	DBBL	.84	L	1.49	H	Q
15	EHFG	3.01	H	-.08	L	Q
16	EL	.42	L	.21	H	Q
17	ETTL	.97	L	.23	H	Q
18	FPAH	.37	L	1.26	H	Q
19	FL	1.57	H	1.58	H	H
20	GRDC	.62	L	.57	H	Q
21	HGHL	.79	L	1.37	H	Q

22	ICPB	.47	L	1.03	H	Q
23	JWIL	1.00	H	1.35	H	H
24	KGL	1.00	H	-.70	L	Q
25	KICL	.65	L	1.18	H	Q
26	KSL	2.18	H	2.84	H	H
27	LPL	4.90	H	.33	H	H
28	MTG	2.52	H	.35	H	H
29	MIL	4.24	H	1.14	H	H
30	MCH	.48	L	3.41	L	L
31	MCL	.45	L	5.14	L	L
32	MCHL	4.93	H	2.10	H	H
33	NPL	.96	L	.87	H	Q
34	NWSI	.92	L	2.57	H	Q
35	PEBL	4.10	H	.70	H	H
36	PPGL	.33	L	1.65	H	Q
37	PL	1.03	H	3.09	L	Q
38	PPL	1.72	H	1.12	H	H
39	RL	.42	L	2.15	H	Q
40	SCL	2.02	H	.23	H	H
41	SCEG	.22	L	2.19	H	Q
42	SNTL	2.67	H	-9.57	L	Q
43	SL	2.30	H	.32	H	H
44	SCGL	.30	L	.88	H	Q
45	STHL	.84	L	.85	H	Q
46	TGL	3.85	H	3.51	L	Q
47	THL	.64	L	4.92	L	L
48	TGL	.66	L	2.11	H	Q
49	WHL	4.67	H	2.05	H	H
50	WGL	.87	L	2.14	H	Q
51	AIAL	1.30	H	1.40	H	H
52	RBNZ	2.17	H	2.49	H	H
Panel G: Technology companies						
1	CTL	.16	L	-1.52	L	L
2	CL	3.46	H	.28	H	H
3	FSL	1.35	H	2.66	H	H
4	PSMS	.48	L	.97	H	Q
5	PL	.26	L	-1.04	L	L
6	RL	1.26	H	.89	H	H
7	RCL	.31	L	-3.76	L	L
8	SEIL	1.24	H	-3.78	L	Q
9	SDL	.88	L	-1.57	L	L
10	TTL	2.21	H	2.52	H	H
11	TCL	1.13	H	3.05	L	Q
12	VL	.72	L	4.60	L	L
13	ZGL	1.65	H	1.28	H	H

* High quality earnings; ** Low quality earnings;*** Questionable earnings.

These results suggests that the various stakeholders before reaching any conclusion about the quality of earnings of the company, they should have a complete consistency among different measures from different perspective; otherwise the quality of earnings needs more investigation and research.

5. Conclusion

This research presents an empirical study about the use of different measure of quality of earnings on different industries. The notion is since there is no agreed-upon definition or technique to measure the quality of earnings, one company or one industry cannot be labelled as having low quality of earnings based on one technique of measurement.

In another words, the company or the industry can be judged as having low or high quality or earnings only if there is consistency among the results of more than one approach or technique for measurement.

This research concludes that the various stakeholders dealing with the company should apply more than one measure for the quality of earning in order to have strong evidence about the level of quality before taking any corrective action or making any decision related to that company. If one company is having low quality of earning according to one technique and high quality of earnings according to another, the stakeholders cannot have a final conclusion about that company and they need more investigations and analysis to assess the quality of earnings.

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