



Appraising the consistency among measures of earnings quality: Evidence from Pharmaceutical industry of India

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Abstract: This paper examined the consistency among measures of earnings quality of listed pharmaceutical firms on the Bombay stock exchange using a sample of firm-year observations over the period 2009-2021. Earning is one of the key accounting information disclose by corporate. Investors generally take into account the financial statements and disclosure of profits while make any decision regarding investment. The measures of earnings quality simply help the investors to evaluate the financial performance of companies that are being shown in the financial statements. This study is expected to have several contributors. First, this study provides good coverage of recognized earnings quality indicators by examining various measures of earnings quality. Second, the measure of earnings quality over time is important for regulators because the analysis of financial statements is a meaningful indicator of the economic efficiency of the country. Thus, this study provides implication for the regulator of accounting standard setting.

Key Words: Earnings quality, financial statements, investors, investments, pharmaceutical industry.

1. INTRODUCTION :

The concept of earnings quality has been one of the key phenomena in the field of accounting research all over the world since the 1980s. The quality of a company's earnings is an important aspect used as consideration of investment decisions by users of financial information. Equity investors, debt contractors and management thinkers used accounting information for multiple reasons (Barth et al., 2001). Earning is the exhibition of operating results during a specified time and an important indicator to evaluate the performance of firms' through a definite period. There are so many accounting scandals in the past years like Parmalat, Enron, WorldCom that have raised questions against the earnings quality of business firms.

In addition to this, there is harmony among researchers regarding the indicators of earnings quality. Earnings attributes are seven in number and divided into two sections that are accounting based and marketing-based measures. The first section comprises of accrual quality, persistence, predictability, smoothness and the second section contains conservatism, value relevance, and timeliness. Market attributes used to determine how close accounting income to share returns and the main purpose of these attributes is to make a change in the market value of equity. This study focuses on both kinds of attributes of earnings quality to measure the consistency among them. Assessment of earning quality requires sometimes the separations of earnings into cash from operation and accruals, the more the earnings is closed to cash from operation, the higher earnings quality. Penman (2001) analyzed that the quality of earnings can be assessed by focusing on earning persistence and high-quality earnings are more persistent and useful in the process of decision making. A number of the preliminary proxies have taken accruals as the basis for calculating the earnings quality. Jones' (1991) model also uses the discretionary accrual model to measure earnings quality. Dechow, Sloan, and Sweeney (1995) modified this model afterward and termed it as Modified Jones' Model. An abundance of research recommends that earnings quality matters to stock investors and it is the most important measure of company performance (Dechow, 1994; Michelson et al., 2000; Graham et al.; 2005, Francis et al., 2004). Finally, a time-series analysis of earnings quality plays an important role to various stakeholders since earnings quality means the firm's accounting performance and is a useful measure for assessing firm value (Dechow and Schrand, 2004).



Accounting earnings can be viewed as the allocation of cash flow to reporting periods, and earnings figures reduce investors' information risk if they reflect the current and future cash flow generating capabilities of a firm. This claim is indirectly supported by Francis et al. (2004), who report that the largest cost of equity effects are observed for the accounting-based attributes of earnings quality. Earnings that are not presented based on facts will actually mislead the user. If the investor uses such a misleading earnings to establish the market value of a company, it will have an impact where the earnings is not able to reflect the true market value of the company (Boediono, 2005). Investment Opportunity Set (IOS) is another factor that may affect earnings quality. A company will generate a higher earnings if the company has a high investment opportunity set rate. The market in this case will give a bigger response. The magnitude of market response to the firm indicates the high quality of earnings generated by the company (Mulyani et al., 2007). Different research results were found by Wahh (2002) who found an association between investment opportunity set and the earnings quality. The high level of investment opportunity set of a company tends to indicate the high value of discretionary accrual which impact on the low quality of the company's earnings. High discretionary accruals caused by the Financial Accounting Standards provide allowances for management in determining accounting policies. This provides an opportunity for management to act opportunistically. In terms of managing earnings management that is not often done by managers, the board of commissioners serves as a function of supervision over financial reporting so that the company can produce good earnings quality (Siallagan and Machfoedz, 2006). In addition, the other part who is also responsible for the financial statements is the audit committee by overseeing the external audit and internal control system. Management actions can also be controlled through a process of supervision by institutional ownership.

Measures of Earnings Quality are:

Persistence

Persistence measures the extent that current earnings persist or recur in the future. It simply means how much of present earnings will maintain in the future for a long period. Persistence of the reported earning is commonly used as a measure of earnings quality which is measured by the sustainability of the reported earnings of a firm (Penman & Zhang 2002; Francis, et al. 2004). Higher persistence is positively associated with high earnings quality since it indicates a stable, sustainable and less volatile earnings generation process that is particularly valued by investors.

If earnings would lack persistence, then it will not be useful for evaluation (Melumad and Nissim, 2008). Earnings which are highly persistent are identified by financial users as more sustainable and less transitory (Richardson et al., 2003). Similarly, earnings which are less persistent are more transitory are considered to be of lower quality (Penman & Zhang 2002; Francis et al, 2004).

Predictability

Predictability is viewed as a desirable attribute of earnings because it increases the precision of earnings forecasts. The time series of earnings is affected by the volatility of operations, the economic environment and the accounting systems employed. Predictability of earnings represents the ability of the reported earnings to predict future component of operating income (Penman & Zhang, 2002). Predictability captures the notion that earnings are of higher quality the more useful they are in predicting future earnings. The higher ability to predict future earnings indicates high earnings quality and poor ability to predict future earnings indicates poor earnings quality. It improves users' ability to forecast items of interest i.e. ability of past earnings to predict future earnings (Dechow, Ge, & Schrand, 2010).

Accrual quality

The difference between cash from operating and recorded earnings generated by business indicates accrual quality (Desai, Krishnamurthy, & Venkataraman, 2006). Likewise, error in estimating the accrual has also been used in measuring the quality of accrual (Francis et al. 2004, Jing 2007 and Johnston 2009). So far, the first method that focuses on the magnitude and second focusing on an error on estimating accrual are commonly used as a proxy for earnings quality (Richardson et al. 2001; Francis et al .2004; Desai et al. 2006). The large the value obtained from each method imply poor earnings quality and a small value obtained from each method indicates high-quality earnings (Desai, Hogan, & Wilkins, 2006).

Smoothness

The term income smoothing refers to effort done by managers of an entity to reduce irregular variation in earnings (Tucker & Zarowin, 2006). Moreover, it is revealed that managers exercise their power to reduce abnormality on the earnings as means to inform interested users about their assessment of the future earnings to the degree allowed by the



accounting standard. Smoothing is usually measured relative to cash flows because they are non-discretionary to a great extent. Low ratios will indicate that insiders exercise accounting discretion to smooth earnings if firm use accruals to manage earnings. The variability of change in operating income should be lower than that of cash flows. It is also discovered that earning smoothness generally uses cash flow as construct on unsmoothed earnings as it is assumed that one cannot easily manipulate cash flows (Margani and Meinarni, 2009). Favourable economic effects of smooth earnings are also documented by Francis et al. (2003), Michelson et al. (2000) and Crabtree and Maher (2005).

Value relevance

Value Relevance is often measured as the ability of earnings to explain variation in returns. This proxy measures the reliability and relevance jointly and as a direct measure of decision usefulness (Joos & Lang, 1994). This means that two key concepts in FASB's conceptual framework, value relevance measure capture both relevance and reliability jointly. Value relevance is the explanatory power of earnings level and change for returns.

Timeliness

The difference between cash from operating and recorded earnings generated by business indicates accrual quality (Desai, Krishnamurthy, & Venkataraman, 2006). Likewise, error in estimating the accrual has also been used in measuring the quality of accrual (Francis et al. 2004, Jing 2007 and Johnston 2009). So far, the first method that focuses on the magnitude and second focusing on an error on estimating accrual are commonly used as a proxy for earnings quality (Richardson et al. 2001; Francis et al. 2004; Desai et al. 2006). The large the value obtained from each method imply poor earnings quality and a small value obtained from each method indicates high-quality earnings (Desai, Hogan, & Wilkins, 2006).

Conservatism

Ball and Shivakumar (2005) measure degree of conservatism as the relationship between accruals and negative cash flows over the association between accruals and cash flows modifying Basu (1997). Conservatism is calculated by using Ball and Shivakumar's (2005) model. The larger (smaller) value of the incremental coefficient (β_3) is, the more (less) conservative earnings is. According to LaFond and Watts (2008), accounting conservatism should be applied by companies to reduce managerial opportunities in manipulating the figures contained in the financial statements.

2. REVIEW OF LITERATURE :

The academic circle has a number of definitions of earnings quality over time but, there is no uniform definition of earnings quality yet. Li (2009) thinks that earnings is like a two-way sword that could be used in either deceitful profits or tell the accurate position of a business. (Schipper & Vincent 2003) defined earnings quality. Hodge (2003) described earnings quality as the discrepancy between the exact earnings and earnings reported in accounting statements. Melumad and Nissim (2008) argued that 'earnings are of high quality if they are representative of long-term earning ability'. Hawkins (1998) found some characteristics of higher earnings quality like maintaining a steady accounting policy, optimum cash levels and a clean and true financial statement that depicts the accurate position of the company. A company should far from the impact of tax fluctuations and capital structure manipulations. Financial reporting quality is described by the distinction between net reported earnings in financial statements and true earnings (Francis Olsson & Schipper 2008; McEwen 2009). Mikhail et al. (2003) identified that past earnings of a firm are related to its future cash flows. Dechow and Schrand (2004) are in the view of that earnings quality is helpful to find out the actual position of a company and truly characterize the performance of a company. Also in another study, Dechow, Ge and Schrand (2010) investigated that higher quality of earnings is more helpful for decision-makers because they provide further information about the financial performance of a company. According to (Gaio 2010), earnings are closely related to sharing returns and higher the value of the share would reflect higher the quality. Penman (2001) affirms that the purpose of accounting quality analysis is to discriminate between the "hard" numbers resulting from cash flows and the "soft" numbers resulting from accrual accounting. Relevancy and trustworthiness of financial statements is the key issue that is emphasized by all the above definitions. The objective of financial reporting is to provide valuable information to investors. There are numerous factors that influence the quality of earnings. Accounting conservatism principle is one of them that help to identify the possible losses and gains in the near future Watts (2003). (Kazemi, 2011) also concluded about conservatism that earnings are used as forecaster which led to desired earnings quality. (Basu, 1997) in favor of accounting, conservatism said that a company can produce earnings of high quality through this principle.



Differences in the definitions of term earnings quality are the root of various evaluation methods of calculating earnings quality. How efficiently the accounting numbers reveal the financial performance of a firm can be analyzed by the earnings quality and measurement of it further based on a number of factors. In scrutinizing the quality of reported earnings of the firms, investors and other security analysts are always concerned. To measure the financial performance of a company, the bottom-line earnings of financial reports are used. Experts make use of the information on financial reports and called it the quality of earnings. Accurate investment decisions can be taken with the help of efficient financial use of information. High and poor quality of earnings depends on the trustworthiness of reporting standards and profits. Investors should understand the information given in the financial reports of the company and evaluate it in terms of quality. It can help investors in building self-reliance in investment decisions. Schipper and Vincent (2003) in their study states that managers of a firm usually have a tendency to improve the earning numbers because their compensation is fixed with the financial results. Also, constricting decisions based on low-quality earnings, in general, will induce unintended welfare transfers. Abdelghaney (2005) focused on three basic approaches to measure the quality of earnings which control three different dimensions of earning management. He developed a model by using three different measures of Leuz et al. (2003), Barton and Simko (2002) and Penman (2001). According to the first approach i.e. Leuz et al. (2003) earnings quality is measured by using the ratio of the standard deviation of operating earnings to standard deviation of cash from operations. Managers have a tendency to smooth earnings because they think that investors like to choose smooth or less variable earnings. Variability of earnings is related to the quality of earnings. Absence in the variability of earnings is allied with higher-quality earnings and if there is variability in earnings then earnings will be called of low quality. Another approach given by Barton and Simko (2002) emphasized on the earnings surprise. Earning surprise can be calculated with the ratio of net operating assets and sales. Firms having a huge opening balance of net operating assets as relative to sales are supposed to report a less predestined earnings surprise. The last approach Penman (2001) take into account the cash from operations. This measure of earnings quality is based on the concept that the proximity to cash means higher quality earnings. However, prior literature on earnings quality has focused on the significance of using real activities as an alternate way to determine earnings quality. The quality of earnings has an impact on decision-makers like investors and creditors who use financial statements for investment decisions. Low quality of earnings reduces the value of the company. High-quality earnings are considered to be more sustainable because reported earnings provide information about a firm's future earnings. In another study by Lu (2012), a relationship is examined among earning quality and firm value while the risk is taking into account. The study found those firms very risky that has low earnings quality and poor financial reporting standards.

3. OBJECTIVE OF STUDY :

To measure the consistency among indicators of earnings quality for pharmaceutical companies

4. RESEARCH METHODOLOGY :

Scope of study

This study is confined to only pharmaceutical companies listed on BSE index. Pharmaceutical and drug industry is a key part of India's economy. This sector has a remarkable growth rate during past years.

Sample size

Pharmaceutical industry under the manufacturing companies head is being chosen for the sample of study. All the companies having not sufficient information are deleted from the sample. So, the sample is further narrowed down to 163 companies of Pharmaceutical Industry.

Sample technique

Purposive sampling technique is used to select the pharmaceutical companies. The reason behind the selection of purposive sampling is that in this way researchers can obtain a representative sample which will result in saving time and money.

Data collection

For estimating indicators of earnings quality and other financial variables, the study will utilize secondary data. The required is obtained from Prowess Database maintained by the Centre for Monitoring Indian Economy (CMIE) and annual reports of the companies listed on BSE 500.



5. Data Analysis :

Table1. Descriptive statistics of measures of earnings quality proxies

Variables	Mean	Median	Max	Min	SD
Panel : A					
Persistence					
Earnings _{i,t}	0.078	.071	2.14	-3.80	.00
Earnings _{i,t-1}	0.060	0.063	2.22	-2.71	0.18
Panel:B					
Accrual Quality					
Sales/Assets	0.99	0.78	122.08	-.34	3.83
OCF/Assets	0.69	0.07	1.11	-1.42	0.122
OCFi,t	0.89	0.090	18.505	-1.345	.845

Source: calculated using e-views by author

Descriptive statistics of our earnings quality proxies is presented in Table 1. For persistence, the mean value of current earnings is 0.078 and median 0.071, while the mean (median) value of previous earnings is 0.060 (0.063), respectively. This result can be explained as that the association between current and previous earnings in listed pharmaceutical firms is stable and medium. Descriptive statistics of the variables used to measure the accrual quality. The degree of accruals quality is 0.089 (mean) and 0.090 (median), respectively. According to Dechow and Dichev (2002), accruals quality of U.S. firms is mean (median) values of 0.028 (0.020) as well as Francis et al. (2004) inform mean (median) values of 0.026 (0.019).

Table 2: Empirical results of measuring earnings quality

Independent variable	Coefficient	Standard error	t-statistic	Adj R ²
Panel A: Persistence				
C	0.0190	0.002939	6.476327	0.776
Earnings _{i,t-1}	0.96714	0.0183	52.69	
Panel B: Accrual Quality				
C	0.058184	0.006911	8.418555	
Size	-5.51E-08	3.04E-07	-0.180942	0.358
OCF over assets	-.865587	0.042932	-20.16181	
Sales over assets	-0.000428	0.001365	-0.313569	

Interpretation

Panel A of Table 2 shows the result of persistence and Panel B shows the accruals quality. Adjusted r² is 77 percent for persistence which explained that earnings of previous year are hugely affecting the current earnings. Similarly, adjusted r² for accrual quality is 35 percent that defined the dependence of size, operating cash flows etc. is only 35 per cent.

Table 3: Pearson correlation of four earnings quality proxies

Correlation					
t-Statistic					



Probability	AQ	OCF_OVER_ASSETS	SALES_OVER_ASSETS	PER1_OLD_INDEP	PER2_NEWIDEP
AQ	1.000000				

OCF_OVER_ASSETS	-0.321176	1.000000			
t-statistic	-13.68394	-----			
p-value	0.0000	-----			
SALES_OVER_ASSETS	0.009125	-0.003897	1.000000		
t-statistic	0.368176	-0.157248	-----		
p-value	0.7128	0.8751	-----		
PER1_OLD_INDEP	0.691323	0.284997	0.000653	1.000000	
t-statistic	38.60498	11.99670	0.026353	-----	
p-value	0.0000	0.0000	0.9790	-----	
PER2_NEWIDEP	0.625364	0.257035	-0.004915	0.863624	1.000000
t-statistic	32.33554	10.73155	-0.198302	69.11987	-----
p-value	0.0000	0.0000	0.8428	0.0000	-----

Source: Calculated using e-views by author

6. CONCLUSION :

In this study, earnings quality over time using a sample 1630 firm-year observations listed on the BSE over ten-year periods (2009-2018). This study used earnings quality's one of dimensions i.e. Accounting based indicators such as Persistence, predictability; accrual quality and smoothness are measured. The result of this study implies that Indian firms engage in earnings management in the presence of economic incentives, thereby reducing earnings quality. Practically, our findings provide important implication for regulator of accounting standard setting because analysis of financial statements is meaningful indicator for economic efficiency of country.

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