

**Measuring Earnings Quality Before and After
Sarbanes-Oxley 2002**

Allison M. Arrington

Honors Thesis

Rutgers University
School of Business – Camden

May 2008

Dr. Sungsoo Kim, Thesis Advisor

Dr. Troy Janes, Second Reader

**Measuring Earnings Quality Before and After
Sarbanes-Oxley 2002**

Allison M. Arrington

Honors Thesis

Rutgers University
School of Business – Camden

May 2008

Dr. Sungsoo Kim, Thesis Advisor

Dr. Troy Janes, Second Reader

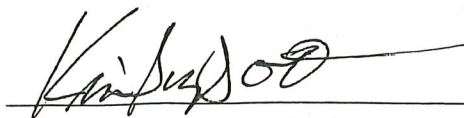
**Measuring Earnings Quality Before and After
Sarbanes-Oxley 2002**

Allison M. Arrington

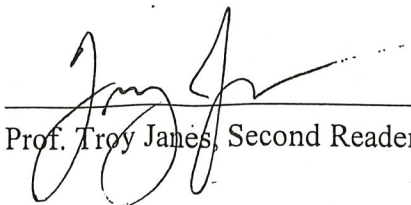
Honors Thesis

School of Business – Camden

May 2008



Prof. SungSoo Kim, Thesis Advisor



Prof. Troy James, Second Reader

Measuring Earnings Quality Before and After Sarbanes-Oxley 2002

Abstract

The United States Congress enacted the Sarbanes-Oxley Act (SOX) in July 2002, as “an act to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes.” The public has an increased need for quality of earnings, assurance that the facts stated in a company’s financial reports are actually true. The purpose of this study is to appraise the effectiveness of the Sarbanes-Oxley Act on improving earnings quality by performing a trial three years prior to and subsequent to the Act. By making comparisons of earnings quality prior to and following the Act, one can obtain an indication of whether the goals of the Sarbanes-Oxley Act were truly achieved.

Introduction

All publicly held companies are required to generate a comprehensive financial statement at the end of each year. These statements provide insight into a company’s financial health. To preserve integrity, auditors are employed to corroborate the truthfulness of a company’s financial statements and attest to this in a written statement.

Failed controls leading to an increasing number of accounting scandals revealed major imperfections within the “self-regulated” accounting profession. Accordingly, the public’s trust in publicly held companies had declined. It was equally important to lawmakers that public trust be restored and maintained. As stated in the case of *U.S. vs. Arthur Young*, “the public must *perceive* a company’s financial statements as being accurate ... encouraging public investment in the Nation's industries.”

Although the fundamental principles of Sarbanes–Oxley had been emergent for years, the rise in corporate bankruptcies and outcries from the public helped to motivate the passing of the Sarbanes-Oxley Act of 2002. The act was not abstractly designed, but deals directly with human behavior. It mandates that those within the profession act ethically, and for this reason financial statements should in effect be more reliable, accurate and true.

Financial Statement Basics

The U.S. Securities and Exchange Commission (SEC) calls for publicly held companies, according to the generally accepted accounting principles (GAAP), to generate a comprehensive financial statement at the end of each year. Also termed an annual report, it includes an income statement or statement of earnings, a statement of cash flows, a balance sheet, and a statement of shareholder's equity. These statements provide insight into a company's financial strength and are important to internal and external users who must make economic decisions based on a company's financial data.

The income statement reveals any profits or losses a company has acquired over a period of time. It typically covers a three-month time period and is distributed quarterly within a fiscal year. The statement of income discloses a company's revenues minus any expenses and taxes. It can also include other revenues and gains, other expenses and losses, discontinued operations, extraordinary items, and earnings per share. The statement of cash flows reveals what cash was used for within a company's daily operations, investing activities and financing activities. It reveals any increase or decrease in cash flows and provides the ending cash balance for the year.

The balance sheet provides information concerning assets, liabilities, and stockholder's equity. Assets are identified as current, long-term, or intangible. Liabilities are classified as current or long-term. The statement of stockholder's equity reports the changes in each stockholder's equity account and in total stockholder's equity during the year. Assets are to equal the combined liabilities and stockholder's equity sections, hence the term "balance sheet." The balance sheet is important for analysts to be able to assess a company's liquidity, solvency, and financial flexibility (Kieso et al. 2006).

Role of the Independent Auditor

As it is conventional for companies to produce an annual financial report, it is likewise expected that these reports will be accurate. While a company may maintain its own internal controls, only independent auditors can officially validate that the facts stated in a company's financial reports are actually true. As mentioned earlier, external users such as stockholders, analysts, creditors, investors, and the like rely on financial statements to make important economic decisions. For this reason, independent auditors play a vital role in ensuring that end users have accurate and reliable data.

The U.S. Supreme Court stated in the case of *U.S. vs. Arthur Young*, "... audited financial statements ... obviate the fear of loss from reliance on inaccurate information, thereby encouraging public investment in the Nation's industries ... reliability of a corporation's financial statements depends upon the public perception of the outside auditor as an independent professional." The SEC defines an auditor as an independent certified public accountant who examines the financial statements that a company's management has prepared. The auditors provide a written report containing an opinion as to whether the financial statements are fairly stated and comply in all material respects with GAAP.

It is the responsibility of an independent auditor to obtain an understanding of the company's environment and internal controls and then apply "auditing procedures." The procedures for verifying the statements may include checking the appropriateness of a company's recorded transactions, testing the effectiveness of internal controls, and sending confirmations. Assessment measures must be sufficient for the auditor to obtain enough evidence to express a valid opinion concerning the financial statements. "If the auditor cannot reach a positive conclusion, then the auditor must either require the company to change the

financial statements or decline to issue a standard audit report” (U. S. Securities and Exchange Commission 2002).

Enron Corporation: When Controls Fail

Enron, a large U.S. energy corporation, grew rapidly through the 1990's. Employees were showered with flamboyant bonuses, engrossed by the stock price, and executives pushed for the use of complex accounting practices. While blemishes of the corporation's culture were seen during the time of the company's establishment, they thrived under top executive Jeff Skilling. Furthermore, Enron had a distracted chairman, a conforming board of directors and a corruptible staff of accountants, auditors and lawyers (Fowler 2005).

Evidence of the company's character flaws were rife dating back to 1987 when company auditors discovered an oil-trading scandal transacted by employees in its Valhalla, N.Y., offices. Chief Executive Officer, Ken Lay responded to the situation incongruously. In most cases, termination of those involved would have been in order. However, to the contrary, Lay kept the subordinates on board. To him, regardless of how these employees made money for the company, it had generated considerable profits for his bottom line. Ultimately, Enron executives did work everything out by “bluffing the markets, and then slowly unwinding the trades” (Fowler 2005).

With the unfolding of the Valhalla scandal, Lay had to figure out how to fill the earnings void. In 1990, Ken Lay recruited Jeffrey Skilling in the hopes that Skilling would offer new innovative ways for the company to make money. In fact, Skilling was excellent at creating new ideas, but lacked the ability to follow through. He ignored the extreme amount of expenses the company had been occurring and failed to focus on maintaining a steady stream of cash flows, which are key indicators of a company's stability. He instead focused on achieving high

revenues and widening profit margins. He emphasized the short-term matter of making the deal and reporting the corresponding revenues, which in some cases had not yet occurred.

The once-august Arthur Andersen accounting firm was Enron's external auditor. Andersen was nicknamed the 'Marine Corps of accounting' for its uncompromising focus on accounting standards (Fowler 2005). But, Andersen failed to exercise due care to find the irregularities and even helped structure some misleading transactions. Most of Enron's business ventures were failing, and the company was losing money. However, with their knowingly misrepresented financial statements signed off by Andersen, Enron was able to report billions of dollars in earnings.

There were numerous instances where the fiscal indiscretion committed by Enron executives went unreported by Andersen. For instance, in 1998 Enron invested \$28 million in Rhythms NetConnections. Once the stock price of Rhythms went up, Enron's stake in the company had increased to \$500 million. The increase is actually representative of profits that are not to be "realized" until the shares are sold and Enron receives the funds. Enron reported this "unrealized" gain as revenue for the period under Andersen's auditing supervision (Fowler 2005).

Is Academia Responsible?

When reflecting upon the downfall of a major corporation, one tries to consider what might have led key members of management to commit such acts of deceit and self-indulgence? As exemplified at Enron, an implicit belief existed that it was okay to commit acts of dishonesty in order to increase the bottom line for the company. Management being willful accomplices in dishonesty confirmed this idea. What might this say about management education?

Business school courses on strategy transaction, cost economics and agency theory has

taught managers to seek new ways to boost earnings. They did in fact follow these principles but did so unethically through excessively rewarding themselves and dumping the costs onto society. The case has been made that the assumptions found within management theory have fallen short since they exclude human dynamics such as morals. Management researchers have created, and business school faculty have relied on, convenient mathematical models that leave out critical facets of management, such as human choice (Rao 2007).

Sumantra Ghosal, considered one of the finest thinkers in management and a prolific writer having doctoral degrees from Harvard and MIT, has stated that, "To really wish to reinstitute ethical or moral concerns in the practice of management, we have first to reinstitute them in management theory. The CEO must recognize that capital is not the fundamental issue... It is the ethical standards, value systems, work ethos ... and developing a vision for the future of an organization that can not only grow an Enron but also keep it alive and growing" (Rao 2007).

Public Perception Decline

The incident at Enron as well as other accounting scandals has stirred up animosity particularly among the American people. Accordingly, the public's trust in publicly held companies declined. It was equally important to lawmakers that public trust be restored and maintained. As stated in the case of *U.S. vs. Arthur Young*, "the public must *perceive* a company's financial statements as being accurate." Public faith in the reliability of a corporation's financial statements depends upon the public perception.

Stock market investing has become an accepted means to increase wealth in the U.S. The stock markets have materialized as a way for Americans of all income levels to make financial provisions. 401(k) plans, in particular, give a large number of employees an opportunity to

invest in the market. In actual fact, forty percent of Americans say that they have a minimum of \$10,000 invested in the stock market in mutual funds or individual stock (Wilkins 2005).

With that said, market declines have become an important issue to voters during general elections. To voters, it is imperative that the actions of corporate executives of publicly traded companies be closely looked after to stamp out possible detriment to investors. Politicians, in response, will logically become more responsive to events that could galvanize market declines. Recent events, such as the Enron scandal, reduced investor certainty and gave rise to calls for corporate ethics and control modifications (Wilkins 2005).

The Sarbanes-Oxley Act

The United States Congress enacted the Sarbanes-Oxley Act (SOX) in July 2002, as “an act to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes” (United States Congress). The Act is comprised of eleven sections or “titles.”

The foundational ideas behind the Sarbanes–Oxley Act had developed for years. Federal bills dating back to 1978 were proposed to create an auditing oversight body. The auditing failures of the market recession of the early 1970s impelled these hearings. Comparable legislation was contested in the following years and many witnesses conferred in detail about how auditing should be regulated. A number of other controversial areas such as executive compensation and stock options, audit firm rotation, general design of accounting rules were addressed, but Congress choose only to carry out further study (Coates 2007).

The first title of Sarbanes-Oxley establishes the Public Company Accounting Oversight Board (PCAOB) to establish standards, impose sanctions, and enforce compliance among other duties. The second title prohibits the performance of auditing and non-auditing services

simultaneously and requires audit partner rotations. The third title forbids management influence on audits, insider trading during black-out periods, and financial statement certification by CEO's, CFO's, or their equivalents. The fourth title mandates off-balance-sheet disclosures, mandates management and principal stockholder-transaction disclosures, and prohibits personal loans to executives. The fifth title requires registered securities associations to adopt conflict-of-interest rules when recommending equity securities in research reports.

The sixth title describes the rights and authority of the Securities and Exchange Commission. The seventh title orders studies and reports by the Government Accountability Office on these issues. The eighth title mandates penalties for various kinds of corporate and criminal fraud. The ninth title describes white-collar crime penalty enhancements. The tenth title directs federal income tax returns be signed by the CEO of a corporation. The eleventh title addresses fraud accountability, including increased penalties under the SEC Act of 1934, prohibition of retaliation against informants, and amendments to federal sentencing guidelines.

SOX Bill Ripple Effects

While there exists a percentage of individuals who feel the SOX bill fell short of their expectations, to the majority, the passing of the SOX bill was a landmark victory. The new legislation has opened the door to an array of opportunities for many business and legal professionals. These have been described by Koehn et al. (2006):

- The Lucas Group, a professional recruiting firm, in its 2005 report, indicated growth in the accounting profession due to SOX compliance. This growth in demand has influenced accounting and finance professionals salaries. Robert Half's International 2005 Salary Guide forecasts that starting salaries for accounting and finance professionals will enhance by an average of 2.4%.
- Big Four accounting firms have had to let go clients due to lack of human resources. This is because audits now require extra hours to complete. Other companies have switched to second-tier firms with the anticipation of receiving superior treatment if they

are among their high-status clients. For example, in 2004, BDO Seidman, LLP, gained 109 clients and lost 38. Grant Thornton LLP, gained 80 clients and lost 63.

- Large companies now have to purchase compliance software, creating activity for vendors. Such software helps with documentation and internal controls. It provides a means to effectively report compliance progress to executives. SOX has influenced the records-management area of companies. Many companies have e-mail archiving systems to allow for quick retrieval of e-mail in the event it is subpoenaed since 2002.
- Consultants and attorneys have found new fortune working for companies needing to act in accordance with SOX. In some instances, SOX has motivated companies to completely privatize or “go dark” to avoid SOX compliance costs and mandatory fiscal disclosure. This process requires deregistering company shares with the SEC. Assisting companies with deregistering has provided attorneys with fees, ranging from 10 to 25 percent of a company’s first-year savings on audit and compliance.
- SOX’s passage is partially responsible for the increased demand for accounting graduates. Bea Sanders, the AICPA’s vice president of academic and career development, states that “SOX has led private companies to increase their hiring of new accountants.” Tom Rogowski, director of university recruiting for Grant Thornton LLP, concurs by noting that “Sarbanes-Oxley has created an additional layer of reporting or diligence required by certain companies and that has had an impact on the number of resources needed.”
- Mergers and acquisition activity did not show a decline. In fact, the number of deals carried out post SOX rose from 7,702 in 2003 to 8,313 in 2004. Some believe the reason behind the increased M & A activity is due to an executive realization, combined entities absorb significant compliance costs associated with SOX better than a single entity alone.
- Respondents to a survey by the Financial Executives Institute in 2003 anticipated audit fees increasing by 30%, and by 50% thereafter. The large increases correlate positively with the increased time that auditors report spending on audits. Deloitte & Touche LLP, estimates spending 40 to 60 percent more time on audits since SOX’s implementation.

A Focus on Earnings Quality

The attention in financial statements has now turned to something that has been referred to as “earnings quality.” Ben McClure director of the McClure & Co. consulting firm, states that when it comes to evaluating a company, high earnings are not as important as high-quality earnings. He holds that when analyzing quarterly reports, investors should ask themselves

important questions such as, Are the company's earnings repeatable? Are they controllable? and, finally, Are the earnings bankable?

The public is increasingly concerned about the quality of earnings, that the facts stated in a company's financial reports are actually true. As mentioned, external users such as stockholders, analysts, creditors, investors, and the like rely on financial statements to make important economic decisions. Misrepresentations found within these statements can distort one's view of the girth of a company's financial position.

A variety of earnings-quality definitions exist. Bellovary, Giacomino and Akers (2005) reviewed several of these definitions. One accounting academic, Walter Teets, states that, "some consider quality of earnings to encompass the underlying economic performance of a firm, as well as the accounting standards that report on the underlying phenomenon." Jamie Pratt defines earnings quality as "the extent to which net income reported on the income statement differs from true earnings." Stephen Penman indicates that, "quality of earnings is based on the quality of forward earnings as well as current reported earnings."

Bellovary, Giacomino and Akers (2005) conclude that earnings quality refers to the ability of reported earnings to reflect the company's true earnings so as to predict future earnings. They hold that earnings quality also refers to the stability, persistence, and lack of variability in reported earnings.

Some Earnings-quality Directives

In 1999, the New York Stock Exchange and the National Association of Securities Dealers created the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees. In the same year, Recommendation No. 8 of the 1999 Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate

Audit Committees asserted that the Generally Accepted Auditing Standards (GAAS) require that a company's outside auditor discuss with the audit committee the auditor's judgments about the *quality*, not just the acceptability, of the company's reported earnings. Furthermore, the Auditing Standards Board (ASB) amended Statement of Auditing Standards No. 61 (SAS No. 61) in response to this recommendation.

In April 2000, the Accounting Institute of Public Accountants (AICPA) issued Practice Alert No. 2000-02, "Quality of Accounting Principles Guidance for Discussions with Audit Committees," to help auditors observe the latest provisions of SAS No. 61. On the subject of quality, it states that an objective standard has not been developed to assist in the consistent assessment on how a company applies accounting principles to its financial statements (Jonas & Blanchet 2000).

The amendment does suggest that the discussion with the audit committee include items that have a significant impact on whether financial statements are faithfully embodied, confirmable, unbiased, and dependable. These characteristics can serve as a starting point for the dialogue on earnings quality since they are consistent with the preferred qualitative characteristics described by the Financial Standards Accounting Board (Jonas & Blanchet 2000).

Goal of Study

As mentioned earlier, one of the major objectives of the Sarbanes-Oxley Act is to encourage ethical behavior of accounting professionals. For this reason, financial statements should in effect be more reliable, accurate and true. Given the new focus on corporate earnings quality, I suppose that examining the grade of a companies' earnings quality, would serve as a suitable measure of how effective the Sarbanes-Oxley Act has been in improving the trustworthiness of financial statements. This study's hypothesis is as follows:

In Bellovary et al.'s EQA, relevant financial data were used to rate a company on each of the twenty earnings-quality criteria using a 5-point scale. The lowest point on the scale (1) indicates the lowest earnings quality on a criterion, and the highest point (5) indicates the highest earnings quality on a criterion (Bellovary, Giacomino & Akers 2005). A 2.5 represents missing data. The highest amount of points a company is able to receive is one hundred (i.e., five for each of the twenty criteria). Because I have elected to use only ten earnings-quality criteria, a firm's earnings-quality score in the present study has a possible total of 50 points.

Sample and Measurement Periods

Fraudulent corporate inner workings of publicly held companies are widespread among U.S. industries. Therefore, it was acceptable to limit the scope of this study to only one industry. I chose the wired telecommunications industry as this one industry because for this industry it was practical to include every firm in the category. By means of the University of Pennsylvania's Wharton (School of Business) Research Data Services, I was able to obtain the necessary financial statement data of all the 102 wired communications carriers found within the database.

The carriers used in this study homogenously possess a North American Industry Classification System (NAICS) code of 517110. The NAICS was developed by the U.S., Canada, and Mexico in 2002 and revised in 2007 to facilitate statistical comparison among businesses across North America. This particular industry is comprised of companies that primarily engage in operating and/or providing access to the transmission of voice, data, text, sound, and video using wired telecommunications network. They provide services such as VoIP services, cable audio and video programming distribution and wired broadband Internet services (U.S. Census Bureau 2007).

In this study, I assessed the earnings quality of the sampled companies three years prior to and three years subsequent to 2002, the year Sarbanes-Oxley was passed. The years 2002 and 2003 were excluded because they were considered an initial “adjustment” period. Thus, the assessment covers the years 1998 through 2000 and 2004 through 2006.

Earnings-Quality Calculations

To illustrate how each company was scored on the ten earnings-quality criteria, I offer an example of the application of Criterion 1, the firm’s gross margin percent (see Appendix 1).

This value was calculated as follows:

$$\text{Gross margin \%} = (\text{Sales} - \text{Cost of Goods Sold}) / \text{Sales}$$

I separated the gross-margin values for the 102 companies in my sample by year and positioned them in ascending order. Then I proceeded to establish ranges. The criteria ranges are representative of the financial records of all of the 102 companies. For example, in 2006 the lowest gross margin percentage (GM%) among the companies was 6% and the highest was 89%. I divided this difference into five quintiles, each quintiles having approximately the same number of companies. I then assigned a point value to each quintile according to the corresponding criteria. In this case an increasing GM% was seen as positive for earnings quality, so the higher a company’s GM%, the higher score received.

| Quintile range | 6%-35% | 36%-45% | 46%-59% | 60%-67% | 68%-89% |
|----------------|--------|---------|---------|---------|---------|
| Score | 1 | 2 | 3 | 4 | 5 |

Wherever a company's GM% fell within the ranges, determined the score they received for this criterion.

An example of a criterion where a low value was seen as positive for earnings quality would be operating lease value. The range of operating lease values among the sample companies was from \$0 to \$3,061,000. The quintile ranges and scores in 2006 for this criterion were as follows:

| | | | | | |
|----------------|---------|-------------|--------------|---------------|-------------|
| Quintile range | 0-0.053 | 0.054-1.086 | 1.087-10.497 | 10.498-47.758 | 47.759-3061 |
| Score | 5 | 4 | 3 | 2 | 1 |

Results

The application of my earnings-quality measure to the companies in my sample resulted in six earnings-quality scores for each of the 102 companies. These six scores included three scores for the years 1998-2000 and three scores for the years 2004-2006 (see Appendix 2).

Analyses Over Entire Sample

By averaging the earnings-quality scores for all sample companies for each of the six years in the study, it was found that there was, in fact, an increase in earnings quality after the Sarbanes-Oxley Act of 2002. The average earnings-quality score pre-SOX was approximately 3.39, and the average score post-SOX was 3.52. This indicates that the average earnings quality was higher after the law than before the law. Further, the average earnings-quality score before SOX and after SOX was computed separately for each company and compared. The results of

this plus/minus test indicated that the majority of the 102 companies in the sample (62 companies, or 61%) showed increased earnings-quality scores after SOX ($\chi^2[1] = 4.32, p < .05$).

The pattern of increased scores over the six years in the study can be seen in Figure 1. This graph illustrates that there was an upward trend in earnings quality even before the passage of the Sarbanes-Oxley Act. Thus, it is possible that the increased average earnings quality post-SOX might simply have been a continuation of a trend that had begun in the later 1990s. This trend might have continued even if there had never been a Sarbanes-Oxley Act.

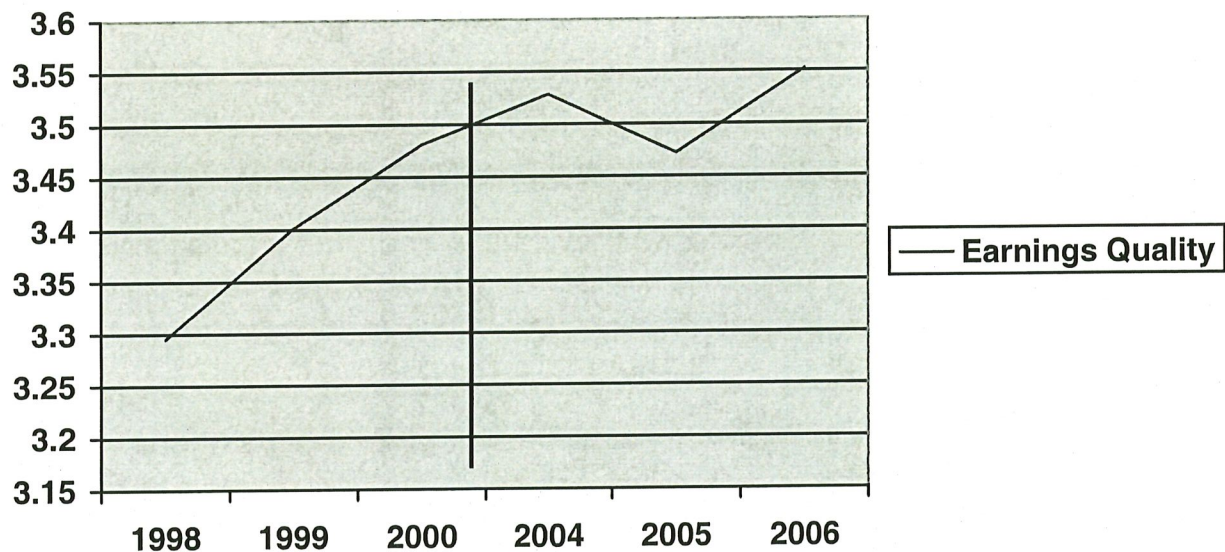


Figure 1. Mean Earnings Quality by Year for All Companies in the Sample

Dividing the Sample by Initial Earnings Quality

To perform an analysis of the variance test, I divided the sample by initial earnings quality. A median split was performed separating the companies into two groups, low and high. The low group consisted of companies with scores below the median and high group was made up of companies with scores above the median. Figure 2 shows the average earnings quality for each year for each of these two groups.

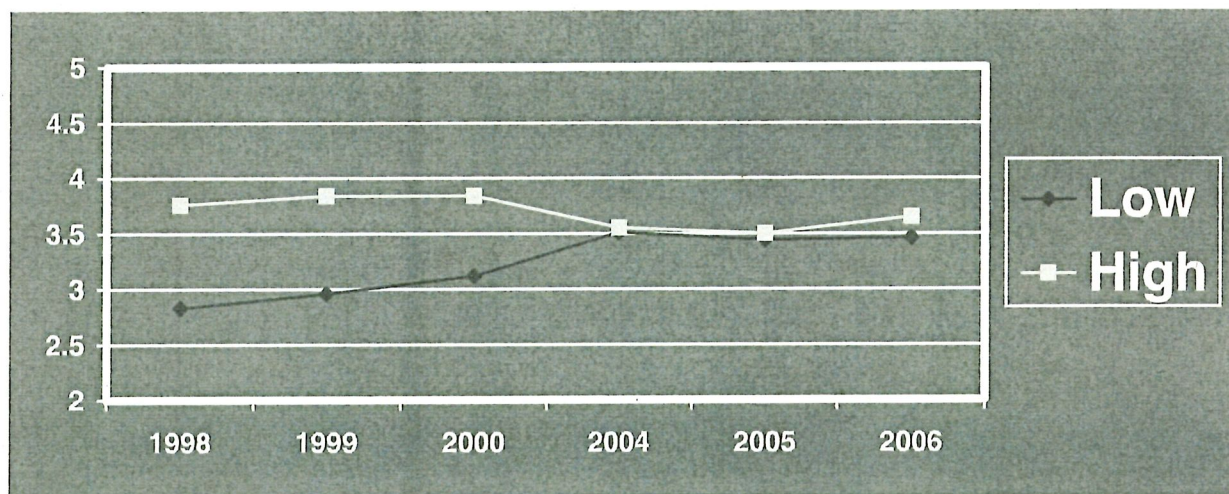


Figure 2. Mean Earnings Quality for Low and High Initial-Earnings Quality Groups

Upon performing an analysis of variance test on this data, the interaction between the variable Year and the variable Initial-Earnings-Quality Size was found to be statistically significant, $F(5,300) = 11.426$, $p < .001$. For those companies with low initial-earnings quality, there was a statistically significant improvement in earnings quality over the six years of the study ($F[5,165] = 17.41$, $p < .001$). On the other hand, the companies whose initial earnings quality was high did not improve over the six years of the study. In fact, it decreased slightly, although this decrease was not statistically significant ($F[5,135] = 0.807$, $F < 1$).

Discussion

As a result of performing these earnings-quality assessments and statistical analyses, I have been able to conclude that there have been some positive effects of the Sarbanes-Oxley Act on earnings quality. Overall, based on my findings, earnings quality did improve post-SOX.

Those companies who initially had low EQA scores before the Sarbanes-Oxley Act showed considerable earnings-quality improvement. On the other hand, those companies who had high EQA scores before the Act did not show earnings-quality improvement, and actually

showed a slight decrease in average earnings quality. This decline may have been due to a “regression to the mean,” indicating that these companies were most likely inflated prior to the Act and are reverting back to where they should have been initially. Thus, in both cases, the Act appears to have had a positive effect on the quality of corporate earnings.

Limitations and Directions for Future Research

One limitation of this study pertained to a large amount of missing financial records within the Wharton database for 2006. The use of a score of 2.5 to stand for a missing data point was not used in 2006, because there were simply too many missing data points. These results should be ultimately confirmed with larger data sets. Also, these results could be generalized by investigating whether or not this earnings-quality pattern occurs for other U.S. industries.

In order to obtain a precise judgment on earnings quality, the EQA is best applied as a “rolling evaluation” of *all* periods in a company’s history. In this way, one can get a clear picture of the stability, or lack thereof, of a company (Bellovary, Giacomino & Akers 2005). In this study, due to time constraints, the EQA was evaluated for the sampled companies only for the three years prior to and the three years subsequent to 2002. Thus, the assessment covers only the years 1998 through 2000 and 2004 through 2006. Further, the present study used only ten of the 20 proposed earnings-quality criteria. Some of the criteria that were not included as a result of the fore mentioned constraints were earnings variability, soundness of acquisitions and dispositions, and reverses of prior charges and provisions. Another criterion that was not included was the issue of shifting revenue and expenses to periods other than when they were incurred.

Seeing benefits of SOX is only one side of the picture. Future research should also include some estimation of the costs of complying with the new legislation. The Public

Company Accounting Oversight Board adopted Auditing Standard No. 2 to implement Section 404. Given the accounting standard and the legal atmosphere, auditors have felt that the best way to ensure that reliable financial statements are issued to the public is to have extensive testing of every internal standard and procedure, even if the tests and procedures do not significantly affect the accuracy of these financial statements (John & Marano 2007).

Furthermore, it costs small companies considerably more to conform to Sarbanes-Oxley than large companies since the new legislation impresses the same requirements on all publicly traded companies without consideration of size. This causes the cost of implementation to be spread unevenly among publicly traded companies. In response, the SEC delayed Section 404 implementation for smaller companies and appointed an Advisory Committee on Smaller Public Companies to make recommendations on how to apply Section 404 to smaller companies (John & Marano 2007).

Conclusions

The major objective of the Sarbanes-Oxley Act was to reduce or even eliminate the risk of unethical behavior within the accounting profession, which will in turn generate truthful reporting. Although the present findings are encouraging, it would be imprudent to suppose that one federal law could single-handedly eliminate all fraud and financial-statement misrepresentation in the financial reporting of American corporations.

I expect that there will be a tendency over time for individuals to counteract the improved corporate financial transparency that has been set in place. Therefore, it is important that issues surrounding the Sarbanes-Oxley Act, such as earnings quality, be continuously monitored to maintain the positive effects of the act. This is necessary in order to achieve sustainable reliability, truthfulness, and accuracy in corporate financial reporting.

References

- Bellovary, Jodi L., Don E. Giacomino, and Michael D. Akers (2005). "Earnings Quality: It's Time to Measure and Report." *CPA Journal* 75 (November), 32-37.
- Coates, John C. "The Goals and Promise of the Sarbanes-Oxley Act." Journal of Economic Perspectives 21.1 (Winter 2007): 91-116.
- Fowler, Tom (2008). "Enron's Implosion Was Anything But Sudden." The Houston Chronicle. 20 Dec. 2005. 14 May <<http://www.chron.com/disp/story.mpl/special/enron/2655409.html>>.
- John, David C., and Nancy M. Marano (2007). "The Sarbanes-Oxley Act: Do We Need a Regulatory or Legislative Fix?" *Backgrounders* 2035 (May 16 2007): 1-10.
- Jonas, Gregory J., and Jeannot Blanchet (2000). "Assessing Quality of Financial Reporting." *Accounting Horizons*, 14 no. 3 (September), 353-363.
- Kieso, Donald E., Jerry J. Weygandt, and Terry D. Warfield (2006). *Intermediate Accounting*. 12th ed. Wiley, 126-171.
- Koehn, Jo Lynne, Stephen C. Delvecchio (2006). "Revisiting the Ripple Effects of the Sarbanes-Oxley Act." *The CPA Journal*, 76 no. 5 (May), 32-39.
- McClure, Ben (2007). "Earnings: Quality Means Everything." Investopedia. Forbes Media Company. 28 Dec. 2007 <<http://www.investopedia.com/articles/02/103002.asp>>.
- Rao, S L. (2007). "Are Business Academics Responsible for Creating Enrons?" *Mid-American Journal of Business* 22, 3-4.
- U.S. Census Bureau. "517110 Wired Telecommunications Carriers." 07 Aug. 2007. <<http://www.census.gov/epcd/www/naics.html>> accessed 05 Feb 2008.

United States Congress. Sarbanes-Oxley Act. 107 Cong., 2nd session, H.R. 3763. 1 Sept. 2007

<<http://fl1.findlaw.com/news.findlaw.com/hdocs/docs/gwbush/sarbanesoxley072302.pdf>>.

U.S. Securities and Exchange Commission (2002). "All About Auditors: What Investors Need

to Know." 24 June, <<http://www.sec.gov/investor/pubs/aboutauditors.htm>>, accessed 26 Dec.

2007.

U.S. V. Arthur Young & Company. No. 82-687. U.S. Supreme Court. 21 Mar. 1984.

<<http://supreme.justia.com/us/465/805>> accessed 26 Dec. 2007.

Wilkins, J. B. (2005). "The Sarbanes-Oxley Act of 2002: The Ripple Effects of Restoring

Shareholder Confidence." *Southern Illinois University Law Journal* v. 29 no. 2 (Winter),

339-59.

Appendix 1

Details of Earnings-Quality Assessment Measure Used in this Study

Question 1: Gross margin/sales ratio.

If high and improving relative to industry it should receive a high EQA score of 5.

Question 2: Operating earnings/sales

If high and improving relative to industry it should receive a high EQA score of 5.

Question 3: Cash flow from operations exceeds net income

The greater the difference relative to industry it should receive a high EQA score of 5.

Question 4: Operating leases

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 5: Pension expenses and gains

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 6: Gain (loss) from asset sales/sales

Incidence is negative. Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 7: Discontinued operations

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 8: Ongoing restructuring charges

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 9: One-time items

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Question 10: Extraordinary items

Greater the occurrence and amount relative to industry it should receive a low EQA score of 1.

Scoring Conditions

Assumption 1: Reported loses constitute a high EQA score.

Assumption 2: A score of 2.5 is to be given in an event of missing or combined data.

Assumption 3: In year 2006 because there is a significantly larger occurrence of missing data, assumption 2 is not applied.

Wharton Research Criteria

Frequency- “Annual”

Beginning “1998 or 2004” **Ending** “2000 or 2006”

Search by- “NAICS, entire database, and active companies”

Conditional Statements- “NAICS, =, 517110(Wired Telecommunications Carriers

Variables- “Company Name”

Data Items/Expanded Data- DATA12, DATA41, DATA308, DATA 172, DATA265, DATA43, DATA 66, DATA376, DATA17, DATA192

SPSS statements

1. To obtain a median split:

```
COMPUTE first = MEAN(Year1998,Year1999,Year2000).
FREQUENCIES VARIABLES = first /STATISTICS = MEDIAN.
```

2. To divide the sample into two groups:

```
COMPUTE size = 0.
IF [first GT 3.44 (median split)] size = 1.
MEANS TABLES=Year1998 Year1999 Year2000 Year2004 Year2005 Year2006 BY size
/CELLS MEAN COUNT STDDEV.
```

Appendix 2

| COMPANY NAME | <u>1998</u> | <u>1999</u> | <u>2000</u> | <u>AVG</u> | <u>2004</u> | <u>2005</u> | <u>2006</u> | <u>AVG</u> |
|------------------------------|--------------------|--------------------|--------------------|-------------------|--------------------|--------------------|--------------------|-------------------|
| VERIZON COMMUNICATIONS INC | 4 | 4.3 | 3.35 | 3.9 | 3.55 | 3.7 | 4.1 | 3.8 |
| BCE INC | 3.3 | 3.5 | 3 | 3.3 | 3.25 | 3.65 | 3.55 | 3.5 |
| BELL CANADA | 4.05 | 4.2 | 4.2 | 4.2 | 3.75 | 4.05 | | 3.9 |
| VERIZON INC/PA | 4.1 | 4.1 | 4.2 | 4.1 | 2.5 | 2.5 | | 2.5 |
| TELUS CORP | 3.25 | 3.8 | 3.6 | 3.6 | 4.25 | 4.15 | 4.05 | 4.2 |
| BT GROUP PLC -ADR | 3.3 | 3.8 | 3.8 | 3.6 | 3.3 | 3.7 | 3.7 | 3.6 |
| CENTURYTEL INC | 3.4 | 3.7 | 3.9 | 3.7 | 3.7 | 3.5 | 3.55 | 3.6 |
| VERIZON INC/MD | 4 | 4.1 | 4.1 | 4.1 | 2.5 | 2.5 | | 2.5 |
| VERIZON INC/VA | 4.1 | 4.2 | 4.1 | 4.1 | 2.5 | 2.5 | | 2.5 |
| CINCINNATI BELL INC | 3.2 | 3.8 | 4 | 3.7 | 3.95 | 3.95 | 3.65 | 3.9 |
| CT COMMUNICATIONS INC | 3.6 | 3.5 | 3.1 | 3.4 | 3.6 | 3.6 | 3.6 | 3.6 |
| COVISTA COMMUNICATIONS INC | 3.4 | 3.5 | 3.3 | 3.4 | 3.7 | 2.5 | | 3.1 |
| METROMEDIA INTERNATIONAL GRP | 3.35 | 3.85 | 3.75 | 3.7 | 3.4 | 2.5 | | 3 |
| VERIZON INC/CA | 4.05 | 4.2 | 4.3 | 4.2 | 2.5 | 2.5 | | 2.5 |
| VERIZON INC/FL | 4.2 | 4.1 | 4 | 4.1 | 2.5 | 2.5 | | 2.5 |
| VERIZON INC/NORTH | 4.2 | 4.3 | 3.9 | 4.1 | 2.5 | 2.5 | | 2.5 |
| HICKORY TECH CORP | 3.3 | 3.3 | 3.4 | 3.3 | 3.5 | 3.4 | 3.4 | 3.4 |
| VERIZON INC/NJ | 4.1 | 4.2 | 4.2 | 4.2 | 2.5 | 2.5 | | 2.5 |
| NEW ULM TELECOM INC | 3.5 | 3.6 | 3.5 | 3.5 | 3.4 | 3.6 | 3.1 | 3.4 |
| NIPPON TELEGRPH & TELE -ADR | 3.25 | 3.65 | 3.25 | 3.4 | 3.45 | 3.45 | | 3.5 |
| NORTH PITTSBURGH SYSTEMS | 3.65 | 3.6 | 3.35 | 3.5 | 3.45 | 3.15 | 2.75 | 3.1 |
| SUREWEST COMMUNICATIONS | 3.4 | 3.5 | 2.9 | 3.3 | 3.5 | 3.6 | 3.35 | 3.5 |
| ELEC COMMUNICATIONS CORP | 3.55 | 3.65 | 3.35 | 3.5 | 3.55 | 3.3 | 3.2 | 3.4 |
| AT&T INC | 3.9 | 3.35 | 3.65 | 3.6 | 3.1 | 3.9 | 3.65 | 3.6 |
| WARWICK VALLEY TELEPHONE CO | 3.55 | 3.45 | 3.65 | 3.6 | 3.2 | 3.2 | 3.2 | 3.2 |
| GENERAL COMMUNICATION -CL A | 3.55 | 3.65 | 3.55 | 3.6 | 3.55 | 4 | 3.55 | 3.7 |
| TELEFONICA SA -ADR | 3.65 | 3.05 | 3.7 | 3.5 | 3.55 | 3.85 | 3.45 | 3.6 |
| TELECOM ITALIA SPA -ADR | 2.5 | 2.5 | 2.5 | 2.5 | 4.55 | 3.55 | | 4.1 |
| TELEFONOS DE MEXICO SA -ADR | 4 | 4.1 | 3.6 | 3.9 | 4 | 3.9 | | 4 |
| RAPID LINK INC | 3.55 | 3.25 | 3.45 | 3.4 | 3.15 | 3.25 | 3.15 | 3.2 |
| COMPANIA TELECOM CHILE -ADS | 4.1 | 4.1 | 3.6 | 3.9 | 3.45 | 4.25 | 4.25 | 4 |
| CORDIA CORP | 2.5 | 2.5 | 3.45 | 2.8 | 3.3 | 3.55 | 3.45 | 3.4 |
| ATLANTIC TELE-NETWORK INC | 3.2 | 3.5 | 3.6 | 3.4 | 3.6 | 3.5 | 3.75 | 3.6 |
| TELEFONICA DE ARGENT -S ADR | 4.05 | 4.3 | 4.05 | 4.1 | 3.85 | 3.55 | 3.9 | 3.8 |
| TELECOM ARGENTINA -ADR B | 4.05 | 4.05 | 4.05 | 4.1 | 3.65 | 3.35 | | 3.5 |
| CHILESAT CORP SA -ADR | 3.25 | 3.55 | 3.55 | 3.5 | 2.5 | 2.5 | | 2.5 |
| PORTUGAL TELECOM SGPS -ADR | 3.7 | 3.7 | 3.3 | 3.6 | 3.6 | 3.3 | 3.7 | 3.5 |
| ROYAL KPN NV -ADR | 3.9 | 3.95 | 3.7 | 3.9 | 4.05 | 4.05 | 4.05 | 4.1 |
| QWEST COMMUNICATION INTL INC | 4.3 | 3.6 | 4.5 | 4.1 | 4.4 | 4 | 3.6 | 4 |
| TELEKOMUNIKASI INDONESIA-ADR | 3.8 | 3.8 | 3.8 | 3.8 | 4.15 | 3.9 | | 4 |
| IDT CORP | 3.3 | 3.3 | 2.8 | 3.1 | 3.35 | 3.2 | 3.1 | 3.2 |
| D & E COMMUNICATIONS INC | 3.3 | 3.2 | 3.5 | 3.3 | 3.5 | 3.3 | 3.6 | 3.5 |
| PRIMUS TELECOMM GROUP INC | 3 | 3.45 | 3.15 | 3.2 | 3.55 | 3.85 | 3.55 | 3.7 |
| NORTEL INVERSORA SA -ADR | 3.85 | 4.05 | 4.05 | 4 | 3.55 | 3.25 | | 3.4 |
| ITC DELTACOM INC | 3.25 | 3.35 | 3.2 | 3.3 | 3.7 | 3.6 | 3.95 | 3.8 |
| TELECOM CP NEW ZEALAND -ADR | 3.3 | 3.8 | 3.7 | 3.6 | 3.8 | 3.55 | 3.6 | 3.7 |

| | | | | | | | | |
|------------------------------|------|------|------|------------|------|------|------|------------|
| ATSI COMMUNICATIONS INC | 3 | 3.1 | 3.35 | 3.2 | 3.3 | 2.85 | 2.75 | 3 |
| HELLENIC TELECOM ORG -ADR | 4 | 4 | 3.85 | 4 | 3.85 | 3.85 | | 3.9 |
| ELEPHANT TALK COMM INC | 2.5 | 2.5 | 3.3 | 2.8 | 3.1 | 3.1 | | 3.1 |
| URALSVYASINFORM JSC -ADR | 2.5 | 3.15 | 3.15 | 2.9 | 3.5 | 3.65 | | 3.6 |
| MULTIBAND CORP | 2.5 | 3.2 | 3.2 | 3 | 3.3 | 3.2 | 3.2 | 3.2 |
| GLOBAL CROSSING LTD | 3.6 | 3.25 | 3.25 | 3.4 | 3.4 | 2.75 | 2.95 | 3 |
| COVAD COMMUNICATIONS GROUP | 3.2 | 3.55 | 3.65 | 3.5 | 3.8 | 3.2 | 3.4 | 3.5 |
| SWISSCOM AG -ADR | 3.45 | 3.25 | 3.25 | 3.3 | 3.45 | 2.95 | 3.25 | 3.2 |
| TIME WARNER TELECOM INC | 3.5 | 3.5 | 3.9 | 3.6 | 3.8 | 3.7 | 3.8 | 3.8 |
| COMMTOUCH SOFTWARE LTD | 3.2 | 3.4 | 3.6 | 3.4 | 3.6 | 3.6 | 3.6 | 3.6 |
| J2 GLOBAL COMMUNICATIONS INC | 3.45 | 3.75 | 4.05 | 3.8 | 3.95 | 3.55 | 3.7 | 3.7 |
| LICT CORP | 3.2 | 3.4 | 3.1 | 3.2 | 3.85 | 2.5 | | 3.2 |
| GOLDEN TELECOM INC | 3.85 | 4.05 | 3.85 | 3.9 | 3.3 | 3.4 | 3.3 | 3.3 |
| PAC-WEST TELECOMM INC | 3.35 | 3.75 | 3.75 | 3.6 | 4.2 | 3.3 | | 3.8 |
| ALASKA COMMUNICATIONS SYS GP | 2.5 | 3.7 | 3.3 | 3.2 | 3.6 | 3.25 | 3.05 | 3.3 |
| DELTATHREE INC | 3.3 | 3.4 | 3.2 | 3.3 | 3.1 | 3.2 | 3.1 | 3.1 |
| TRINSIC INC | 3.3 | 3 | 3.35 | 3.2 | 3.8 | 3.8 | | 3.8 |
| KT CORP -ADR | 4.3 | 4.3 | 4.1 | 4.2 | 4.2 | 3.9 | | 4.1 |
| CITIZENS COMMUNICATIONS CO | 2.95 | 2.9 | 3.3 | 3.1 | 3.7 | 3.6 | 2.9 | 3.4 |
| EQUINIX INC | 2.5 | 3.4 | 3.4 | 3.1 | 4.05 | 4.05 | 3.2 | 3.8 |
| DIAMOND CABLE COMMUN LTD | 2.5 | 3.9 | 3.7 | 3.4 | 2.5 | 2.5 | | 2.5 |
| COGENT COMMUNICATIONS GRP | 2.5 | 2.5 | 3.05 | 2.7 | 3.15 | 3.15 | 3.1 | 3.1 |
| SKYWAY COMMUN HOLDINGS CORP | 2.5 | 2.5 | 3.45 | 2.8 | 2.5 | 2.5 | | 2.5 |
| XFONE INC | 2.5 | 3.6 | 3.4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 |
| FAIRPOINT COMMUNICATIONS INC | 2.5 | 2.5 | 3.65 | 2.9 | 3.4 | 3.2 | 3.1 | 3.2 |
| TELECOMUNICAC DE PUERTO RICO | 2.5 | 2.5 | 2.6 | 2.5 | 3.5 | 3.4 | 3.7 | 3.5 |
| QWEST CORP | 2.5 | 2.5 | 4.4 | 3.1 | 4.3 | 4.3 | | 4.3 |
| TELKOM SA LTD -ADR | 2.5 | 2.5 | 3.85 | 3 | 3.95 | 3.3 | | 3.6 |
| MADISON RIVER CAP LLC | 2.5 | 2.5 | 2.5 | 2.5 | 3.85 | 3.7 | | 3.8 |
| CHINA NETCOM GROUP CORP -ADR | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.9 | | 3.8 |
| CONSOLIDATED COMM HLDGS INC | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.95 | 3.8 |
| IOWA TELECOM SERVICES INC | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.5 | 3.6 |
| OTELCO INC | 2.5 | 2.5 | 2.5 | 2.5 | 3.85 | 3.85 | 3.55 | 3.8 |
| MADISON RIVER COMM -REDH | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | 2.5 |
| AT&T INC-PRO FORMA | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | 2.5 | | 3.3 |
| EMBARQ CORP | 2.5 | 2.5 | 2.5 | 2.5 | 4.15 | 3.9 | 4.15 | 4.1 |
| WINDSTREAM CORP | 2.5 | 2.5 | 2.5 | 2.5 | 4.2 | 4.3 | 4 | 4.2 |
| WINDSTREAM CORP -PRO FORMA | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | | 3.3 |
| AT&T INC -PRO FORMA2 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.95 | | 3.2 |
| CITIZENS COMMUN -PRO FORMA | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.6 | 3.2 | 3.1 |
| BRASIL TELECOM SA -ADR | 2.5 | 2.5 | 4.1 | 3 | 3.9 | 3.8 | 3.65 | 3.8 |
| ROSTELECOM LONG DSTNCE -ADR | 3.65 | 3.25 | 3.55 | 3.5 | 3.45 | 3.65 | | 3.6 |
| PCCW LTD -ADR | 3.3 | 3.4 | 3.9 | 3.5 | 3.65 | 3.7 | | 3.7 |
| VIDESH SANCHAR NIGAM -ADR | 3.25 | 3.45 | 3.7 | 3.5 | 3.1 | 3.6 | | 3.4 |
| TELSTRA CORP LTD -ADR | 3.9 | 4.05 | 4.05 | 4 | 3.75 | 4.05 | 4.2 | 4 |
| MAGYAR TELEKM TELCM PLC -ADR | 3.6 | 3.6 | 3.6 | 3.6 | 3.7 | 3.6 | 3.65 | 3.7 |
| CITY TELECOM H K LTD -ADR | 3.25 | 3.35 | 2.95 | 3.2 | 3.75 | 3.75 | 3.75 | 3.8 |
| EMBRATEL PARTICIPACOES -ADR | 3.85 | 3.7 | 3.7 | 3.8 | 3.7 | 4.2 | 3.65 | 3.9 |
| FRANCE TELECOM -ADR | 4.25 | 4.25 | 4.25 | 4.3 | 4.25 | 3.65 | 3.7 | 3.9 |
| DEUTSCHE TELEKOM AG -ADR | 3.5 | 3.8 | 3.8 | 3.7 | 4.1 | 4.25 | 4.25 | 4.2 |

| | | | | | | | | |
|-----------------------------|------|------|------|------------|------|------|------|------------|
| BRASIL TELECOM PART -ADR | 4.3 | 4.05 | 3.9 | 4.1 | 4.05 | 3.65 | | 3.9 |
| TELE NORTE LESTE -ADR | 4.15 | 3.9 | 4.15 | 4.1 | 4.2 | 4.1 | | 4.2 |
| TELECOMMUN DE SAO PAUL -ADR | 3.9 | 4 | 4.35 | 4.1 | 4 | 3.9 | 3.9 | 3.9 |
| MAHANAGAR TEL NIGAM -ADR | 3.75 | 3.55 | 3.5 | 3.6 | 3.65 | 3.65 | | 3.7 |
| CHUNGHWA TELECOM CO -ADR | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | 4.15 | 4.05 | 4.1 |
| CHINA TELECOM CORP LTD -ADR | 2.5 | 2.5 | 4.1 | 3 | 4.1 | 4.2 | 4.25 | 4.2 |

Plus Minus Test

| | <u>1998</u> | <u>1999</u> | <u>2000</u> | | <u>2004</u> | <u>2005</u> | <u>2006</u> | | Change |
|--------------------|-------------|-------------|-------------|------------|-------------|-------------|-------------|------------|--------|
| <u>SMBL</u> | | | | | | | | | |
| VZ | 4 | 4.3 | 3.35 | 3.9 | 3.55 | 3.7 | 4.1 | 3.8 | - |
| BCE | 3.3 | 3.5 | 3 | 3.3 | 3.25 | 3.65 | 3.55 | 3.5 | + |
| BCE1 | 4.05 | 4.2 | 4.2 | 4.2 | 3.75 | 4.05 | | 3.9 | - |
| VZ2 | 4.1 | 4.1 | 4.2 | 4.1 | 2.5 | 2.5 | | 2.5 | |
| TU | 3.25 | 3.8 | 3.6 | 3.6 | 4.25 | 4.15 | 4.05 | 4.2 | + |
| BT | 3.3 | 3.8 | 3.8 | 3.6 | 3.3 | 3.7 | 3.7 | 3.6 | = |
| CTL | 3.4 | 3.7 | 3.9 | 3.7 | 3.7 | 3.5 | 3.55 | 3.6 | - |
| VZ4 | 4 | 4.1 | 4.1 | 4.1 | 2.5 | 2.5 | | 2.5 | |
| VZ5 | 4.1 | 4.2 | 4.1 | 4.1 | 2.5 | 2.5 | | 2.5 | |
| CBB | 3.2 | 3.8 | 4 | 3.7 | 3.95 | 3.95 | 3.65 | 3.9 | + |
| CTCI | 3.6 | 3.5 | 3.1 | 3.4 | 3.6 | 3.6 | 3.6 | 3.6 | + |
| CVST | 3.4 | 3.5 | 3.3 | 3.4 | 3.7 | 2.5 | | 3.1 | - |
| MTRM | 3.35 | 3.85 | 3.75 | 3.7 | 3.4 | 2.5 | | 3 | - |
| VZ12 | 4.05 | 4.2 | 4.3 | 4.2 | 2.5 | 2.5 | | 2.5 | |
| VZ13 | 4.2 | 4.1 | 4 | 4.1 | 2.5 | 2.5 | | 2.5 | |
| VZ15 | 4.2 | 4.3 | 3.9 | 4.1 | 2.5 | 2.5 | | 2.5 | |
| HTCO | 3.3 | 3.3 | 3.4 | 3.3 | 3.5 | 3.4 | 3.4 | 3.4 | + |
| VZ1 | 4.1 | 4.2 | 4.2 | 4.2 | 2.5 | 2.5 | | 2.5 | |
| 3NULM | 3.5 | 3.6 | 3.5 | 3.5 | 3.4 | 3.6 | 3.1 | 3.4 | - |
| NTT | 3.25 | 3.65 | 3.25 | 3.4 | 3.45 | 3.45 | | 3.5 | + |
| NPSI | 3.65 | 3.6 | 3.35 | 3.5 | 3.45 | 3.15 | 2.75 | 3.1 | - |
| SURW | 3.4 | 3.5 | 2.9 | 3.3 | 3.5 | 3.6 | 3.35 | 3.5 | + |
| 3ELEC | 3.55 | 3.65 | 3.35 | 3.5 | 3.55 | 3.3 | 3.2 | 3.4 | - |
| T | 3.9 | 3.35 | 3.65 | 3.6 | 3.1 | 3.9 | 3.65 | 3.6 | = |
| WWVY | 3.55 | 3.45 | 3.65 | 3.6 | 3.2 | 3.2 | 3.2 | 3.2 | - |
| GNCM | | | | | | | | | |
| A | 3.55 | 3.65 | 3.55 | 3.6 | 3.55 | 4 | 3.55 | 3.7 | + |
| TEF | 3.65 | 3.05 | 3.7 | 3.5 | 3.55 | 3.85 | 3.45 | 3.6 | + |
| TI | 2.5 | 2.5 | 2.5 | 2.5 | 4.55 | 3.55 | | 4.1 | |
| TMX | 4 | 4.1 | 3.6 | 3.9 | 4 | 3.9 | | 4 | + |
| 3RPID | 3.55 | 3.25 | 3.45 | 3.4 | 3.15 | 3.25 | 3.15 | 3.2 | - |
| CTC | 4.1 | 4.1 | 3.6 | 3.9 | 3.45 | 4.25 | 4.25 | 4 | + |
| 3CORG | 2.5 | 2.5 | 3.45 | 2.8 | 3.3 | 3.55 | 3.45 | 3.4 | + |
| ATNI | 3.2 | 3.5 | 3.6 | 3.4 | 3.6 | 3.5 | 3.75 | 3.6 | + |
| TAR | 4.05 | 4.3 | 4.05 | 4.1 | 3.85 | 3.55 | 3.9 | 3.8 | - |
| TEO | 4.05 | 4.05 | 4.05 | 4.1 | 3.65 | 3.35 | | 3.5 | - |
| CSAOY | 3.25 | 3.55 | 3.55 | 3.5 | 2.5 | 2.5 | | 2.5 | |

| | | | | | | | | | |
|-------|------|------|------|------------|------|------|------|------------|---|
| PT | 3.7 | 3.7 | 3.3 | 3.6 | 3.6 | 3.3 | 3.7 | 3.5 | - |
| KPN | 3.9 | 3.95 | 3.7 | 3.9 | 4.05 | 4.05 | 4.05 | 4.1 | + |
| Q | 4.3 | 3.6 | 4.5 | 4.1 | 4.4 | 4 | 3.6 | 4 | - |
| TLK | 3.8 | 3.8 | 3.8 | 3.8 | 4.15 | 3.9 | | 4 | + |
| IDT | 3.3 | 3.3 | 2.8 | 3.1 | 3.35 | 3.2 | 3.1 | 3.2 | + |
| DECC | 3.3 | 3.2 | 3.5 | 3.3 | 3.5 | 3.3 | 3.6 | 3.5 | + |
| 3PRTL | 3 | 3.45 | 3.15 | 3.2 | 3.55 | 3.85 | 3.55 | 3.7 | + |
| NTL | 3.85 | 4.05 | 4.05 | 4 | 3.55 | 3.25 | | 3.4 | - |
| 3ITCD | 3.25 | 3.35 | 3.2 | 3.3 | 3.7 | 3.6 | 3.95 | 3.8 | + |
| NZT | 3.3 | 3.8 | 3.7 | 3.6 | 3.8 | 3.55 | 3.6 | 3.7 | + |
| 3ATSX | 3 | 3.1 | 3.35 | 3.2 | 3.3 | 2.85 | 2.75 | 3 | - |
| OTE | 4 | 4 | 3.85 | 4 | 3.85 | 3.85 | | 3.9 | - |
| 3ETLK | 2.5 | 2.5 | 3.3 | 2.8 | 3.1 | 3.1 | | 3.1 | + |
| UVYZY | 2.5 | 3.15 | 3.15 | 2.9 | 3.5 | 3.65 | | 3.6 | + |
| MBND | 2.5 | 3.2 | 3.2 | 3 | 3.3 | 3.2 | 3.2 | 3.2 | + |
| GLBC | 3.6 | 3.25 | 3.25 | 3.4 | 3.4 | 2.75 | 2.95 | 3 | - |
| DVW | 3.2 | 3.55 | 3.65 | 3.5 | 3.8 | 3.2 | 3.4 | 3.5 | = |
| SCM | 3.45 | 3.25 | 3.25 | 3.3 | 3.45 | 2.95 | 3.25 | 3.2 | - |
| TWTC | 3.5 | 3.5 | 3.9 | 3.6 | 3.8 | 3.7 | 3.8 | 3.8 | + |
| CTCH | 3.2 | 3.4 | 3.6 | 3.4 | 3.6 | 3.6 | 3.6 | 3.6 | + |
| JCOM | 3.45 | 3.75 | 4.05 | 3.8 | 3.95 | 3.55 | 3.7 | 3.7 | - |
| LICC | 3.2 | 3.4 | 3.1 | 3.2 | 3.85 | 2.5 | | 3.2 | = |
| GLDN | 3.85 | 4.05 | 3.85 | 3.9 | 3.3 | 3.4 | 3.3 | 3.3 | - |
| PACW | 3.35 | 3.75 | 3.75 | 3.6 | 4.2 | 3.3 | | 3.8 | + |
| ALSK | 2.5 | 3.7 | 3.3 | 3.2 | 3.6 | 3.25 | 3.05 | 3.3 | + |
| DDDC | 3.3 | 3.4 | 3.2 | 3.3 | 3.1 | 3.2 | 3.1 | 3.1 | - |
| TRINQ | 3.3 | 3 | 3.35 | 3.2 | 3.8 | 3.8 | | 3.8 | + |
| KTC | 4.3 | 4.3 | 4.1 | 4.2 | 4.2 | 3.9 | | 4.1 | - |
| CZN | 2.95 | 2.9 | 3.3 | 3.1 | 3.7 | 3.6 | 2.9 | 3.4 | + |
| EQIX | 2.5 | 3.4 | 3.4 | 3.1 | 4.05 | 4.05 | 3.2 | 3.8 | + |
| 0171B | 2.5 | 3.9 | 3.7 | 3.4 | 2.5 | 2.5 | | 2.5 | |
| CCOI | 2.5 | 2.5 | 3.05 | 2.7 | 3.15 | 3.15 | 3.1 | 3.1 | + |
| SWYC | | | | | | | | | |
| Q | 2.5 | 2.5 | 3.45 | 2.8 | 2.5 | 2.5 | | 2.5 | |
| XFN | 2.5 | 3.6 | 3.4 | 3.2 | 3.2 | 3.2 | 3.2 | 3.2 | = |
| FRP | 2.5 | 2.5 | 3.65 | 2.9 | 3.4 | 3.2 | 3.1 | 3.2 | + |
| 0304B | 2.5 | 2.5 | 2.6 | 2.5 | 3.5 | 3.4 | 3.7 | 3.5 | + |
| Q1 | 2.5 | 2.5 | 4.4 | 3.1 | 4.3 | 4.3 | | 4.3 | + |
| TKG | 2.5 | 2.5 | 3.85 | 3 | 3.95 | 3.3 | | 3.6 | + |
| 0522B | 2.5 | 2.5 | 2.5 | 2.5 | 3.85 | 3.7 | | 3.8 | |
| CN | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.9 | | 3.8 | |
| CNSL | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.95 | 3.8 | |
| IWA | 2.5 | 2.5 | 2.5 | 2.5 | 3.7 | 3.7 | 3.5 | 3.6 | |
| OTT | 2.5 | 2.5 | 2.5 | 2.5 | 3.85 | 3.85 | 3.55 | 3.8 | |
| 0637B | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | 2.5 | |
| T.R | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | 2.5 | | 3.3 | |
| EQ | 2.5 | 2.5 | 2.5 | 2.5 | 4.15 | 3.9 | 4.15 | 4.1 | |
| WIN | 2.5 | 2.5 | 2.5 | 2.5 | 4.2 | 4.3 | 4 | 4.2 | |
| WIN.P | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | | 3.3 | |
| T.O | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.95 | | 3.2 | |
| CZN.R | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | 3.6 | 3.2 | 3.1 | |

| | | | | | | | | | |
|-------|------|------|------|------------|------|------|------|------------|---|
| BTM | 2.5 | 2.5 | 4.1 | 3 | 3.9 | 3.8 | 3.65 | 3.8 | - |
| ROS | 3.65 | 3.25 | 3.55 | 3.5 | 3.45 | 3.65 | | 3.6 | + |
| PCCW | | | | | | | | | |
| Y | 3.3 | 3.4 | 3.9 | 3.5 | 3.65 | 3.7 | | 3.7 | + |
| VSL | 3.25 | 3.45 | 3.7 | 3.5 | 3.1 | 3.6 | | 3.4 | - |
| TLSYY | 3.9 | 4.05 | 4.05 | 4 | 3.75 | 4.05 | 4.2 | 4 | = |
| MTA | 3.6 | 3.6 | 3.6 | 3.6 | 3.7 | 3.6 | 3.65 | 3.7 | + |
| CTEL | 3.25 | 3.35 | 2.95 | 3.2 | 3.75 | 3.75 | 3.75 | 3.8 | + |
| EMT | 3.85 | 3.7 | 3.7 | 3.8 | 3.7 | 4.2 | 3.65 | 3.9 | + |
| FTE | 4.25 | 4.25 | 4.25 | 4.3 | 4.25 | 3.65 | 3.7 | 3.9 | - |
| DT | 3.5 | 3.8 | 3.8 | 3.7 | 4.1 | 4.25 | 4.25 | 4.2 | + |
| BRP | 4.3 | 4.05 | 3.9 | 4.1 | 4.05 | 3.65 | | 3.9 | - |
| TNE | 4.15 | 3.9 | 4.15 | 4.1 | 4.2 | 4.1 | | 4.2 | + |
| TSP | 3.9 | 4 | 4.35 | 4.1 | 4 | 3.9 | 3.9 | 3.9 | - |
| MTE | 3.75 | 3.55 | 3.5 | 3.6 | 3.65 | 3.65 | | 3.7 | + |
| CHT | 2.5 | 2.5 | 2.5 | 2.5 | 4.05 | 4.15 | 4.05 | 4.1 | |
| CHA | 2.5 | 2.5 | 4.1 | 3 | 4.1 | 4.2 | 4.25 | 4.2 | + |