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UNIVERSITY OF ARKANSAS
SAM M. WALTON COLLEGE OF BUSINESS

The Effect of Compliance with Section 404 of the Sarbanes-Oxley Act on Small Cap Technology Company's Stock Prices

An honors thesis submitted in partial fulfillment of the requirements for the degree Bachelor of Science in Business Administration in Financial Management and Investments

By

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University of Arkansas, Fayetteville
Business Administration in Financial Management and Investments, 2013

May 2013
University of Arkansas

Abstract:

This paper analyzes the effect of compliance with Section 404 of the Sarbanes-Oxley Act, also referred to as SOX, on small market cap technology firms using a comparable company analysis model. The comparable company analysis model is used to calculate and compare the average intrinsic values of 45 small and 45 large cap technology companies from the periods of January 1, 1999 to January 1, 2001 (Pre SOX era) and January 1, 2007 to January 1, 2009 (Post SOX era). The purpose of looking at large cap technology firms as a benchmark is to compare how different sized firms within the same industry fair after implementation and compliance of SOX. The stated objective of the Sarbanes-Oxley Act was to improve the quality of financial reporting and to ultimately increase investor confidence again due to the major corporate accounting scandals with companies such as Enron, WorldCom, and Tyco International. According the SEC, Section 404 procedures are intended to help companies detect fraudulent reporting early and deter financial fraud, directly improving the reliability of financial statements. The intentions of Sarbanes-Oxley were in favor of improving investor confidence; however, it had an adverse effect on small cap technology firm's stock prices. This hypothesis is supported and analyzed by the data derived from the comparable company model results.

Keywords:

Sarbanes-Oxley Act of 2002, Intrinsic Values, Technology Sector, Market Capitalization, Small Cap, Large Cap, Compliance, Section 404, Comparable Company Analysis
This honors thesis is approved for recommendation.

UNIVERSITY OF ARKANSAS
SAM M. WALTON COLLEGE OF BUSINESS

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Table of Contents:

Abstract and Keywords……i

Thesis Approval……...ii

Acknowledgements……iii

Section I: Introduction……1

Section II: Literature Review……...4

Part I: Hypothesis……7

Section III: Methodology ……8

Section IV: Empirical Results ……...14

Section V: Robustness Analysis ……...33

Conclusion: ……...41

Bibliography……..44

Section I: Introduction

The purpose of this thesis is to examine and analyze the effect of compliance with Section 404 of the Sarbanes-Oxley Act, also known as SOX, on smaller public technology company's stock prices. This paper examines the events and rationale of SOX's policy actions as well as theoretical implications it had for small cap technology firms. The paper will include a comparable company analysis of 45 large cap and 45 small cap companies in the technology sector. According to USA Today, "Tech firms with 500 employees or less say they're particularly hard hit because they run fast and lean" (Kessler). This is because technology firms have to keep up with larger competitor firms and do not have as much capital, comparatively to a large cap tech firm, to do business and comply with SOX. The cost of complying with SOX 404 impacts smaller companies disproportionately, as there is a significant fixed cost involved in complying with SOX. For example, "during 2004 U.S. companies with revenues exceeding $5 billion spent 0.06% of revenue on SOX compliance, while companies with less than $100 million in revenue spent 2.55%" (Ogneva).

In this paper, I will investigate the effect of compliance with Section 404 of the Sarbanes-Oxley Act on small cap technology company's stock price. The intentions behind Sarbanes-Oxley were to improve investor's concerns by improving transparency and the accuracy of financial reports. However, many of the provisions of Sarbanes-Oxley increased accounting, audit, and other general compliance costs. Smaller firms have fewer resources, thus enjoy lesser economies of scale and engage in small investments or projects. Because of this, smaller public technology firms are likely to face higher costs and actually receive lower benefits from SOX, which was supposed to help out businesses alike. Even more specific, smaller technology companies faced more of an adverse effect from SOX because 1) Escalating Costs 2) Huge Work

Loads 3) Not Enough Accountants 4) Impractical Rules. A small cap tech company named Captaris "estimated its direct costs alone will reach $1 million — a lot for a company that was $10,000 short of breaking even in the first nine months of the year" (Kessler). In this paper I use a comparable company analysis of 45 small and 45 large cap public technology companies. I use this model to determine a two year average of the 45 small cap and 45 large cap tech firms to find the Pre and Post SOX period's intrinsic values. I use this model to show the effect of compliance with Section 404 of Sarbanes-Oxley specifically on smaller tech company's stock prices in comparison to their larger counterpart, which serves as a benchmark.

This paper shows the compliance effects of Section 404 of SOX with smaller public technology companies. According to one of my findings I found that "firms in technology-intensive industries tend to rely heavily on innovation…they tend to be high-growth firms that invest heavily in R&D projects…as a result, these firms may be relatively difficult to value and therefore have more volatile stock prices" (Sarbanes-Oxley). From these findings I created my testable hypothesis that Section 404 of the Sarbanes-Oxley Act's compliance costs affected smaller technology company's stock prices compared to larger companies in the same industry. I found out using a comparable company analysis model that in fact smaller public tech firms had a negative percentage change in intrinsic value from Pre SOX to Post SOX periods compared to their larger complements. Also supporting my findings are other reports from SSRN that complement my hypothesis on the effects of Section 404 of the Sarbanes-Oxley Act of 2002 on small cap technology firms. My findings show that smaller technology companies seemed to decrease at a higher relative rate on the average intrinsic value of stock price compared to large cap companies in the same industry, which intrinsic values actually increased after the implementation of SOX. This reinforces my testable hypothesis because according to

the Small Minus Big Factor of the Famma French Stock Pricing Model that "smaller firms tend to outperform large ones" (Lilien). With this benchmark, it would correlate with the compliance of Sarbanes-Oxley and diminishing average intrinsic values.

This paper contributes to the body of knowledge in that it analyzes an important piece of legislation's intended and unintended effects on small cap technology companies. This allows for the possibility to hedge risk as an investor if one understands the potential adverse effects of a piece of legislation, in this case Section 404 of Sarbanes-Oxley. For example, with my analysis and model that shows that smaller tech firms are hurt from compliance costs with Section 404 of the Sarbanes-Oxley Act that was intended to help investors' confidence allows potential and current investors to be active in the market. This is a money making opportunity for the investor who knowing this, could short the market at this given time or hedge the risk of investing in the small cap technology sector. This would give investors an opportunity to make even wiser investing decisions on what to avoid and what to ultimately invest in. This information could educate investors on future legislation that may impact the stock market that has good intentions behind it.

The next part of this paper will start with Section II, which contains the Literature Review. The Literature Review Section will summarize other research that is relevant to effects of Sarbanes-Oxley and show a broad understanding of the academic field. This section also touches up on this paper's testable hypothesis. Section III contains Methodology. This section is a discussion on the definition of the specific variables and outlines key terms important to this paper. Section IV discusses empirical results and also explains the comparable company analysis model used to find the intrinsic value percentage change from Pre to Post Sarbanes-Oxley compliance periods. Part I of Section IV analyzes descriptive univariance statistics such

as mean, median, standard deviation, minimum, maximum, count and the 25^{th} and 75^{th} percentile. Descriptive statistics provide a useful summary of stock prices when performing empirical and analytical analysis. It presents a set of brief descriptive coefficients that summarize a given data set. Section V presents the robustness analysis. This section will describe my model's ability to effectively perform while the variables and assumptions are altered. Lastly, Section VI concludes the paper followed by references and data.

Section II: Literature Review

The Sarbanes-Oxley Act, also known as SOX, was passed back in July 29^{th}, 2002. The main objective of the Sarbanes-Oxley Act was to improve the quality of financial reporting and to ultimately increase investor confidence again due to the major recent corporate accounting scandals with companies such as Enron, WorldCom, and Tyco International. The results of the scandals ultimately cost investors billions of dollars when the share prices finally reflected the fraud that was eventually made public. This affected public investor confidence in the United States and security markets. This act was also known as "the Public Company Accounting Reform and Investor Protection Act" and "Corporate and Auditing Accountability and Responsibility Act". The Securities and Exchange Commission, also known as the SEC, was put in charge for enforcing Section 404 of the Sarbanes-Oxley Act in 2003, which required companies to put internal systems to monitor accurate financial reports.

The most well known aspect of Sarbanes-Oxley is Section 404, which requires an assessment by the Chief Executive Officer, Chief Financial Officer, and an outside auditor to measure the effectiveness of the firm's internal controls over the accuracy of their financial statements. " This section is the most costly aspect of the legislation for companies to implement, as documenting and testing important financial manual and automated controls

requires enormous effort" (Media). Under Section 404 of the Sarbanes-Oxley Act, management has to comply with producing an internal control report as part of each annual Exchange Act Report (10K). This report must "affirm the responsibility of management for establishing and maintain an adequate internal control structure and procedures for financial reporting" (Prentice). The report must also contain "an assessment as of the end of the most recent fiscal year of the Company, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting" (NYSSCPA). A brief overview of Section 404 of the Sarbanes-Oxley Act is as follows:

> "**(a) Rules Required.** The Commission shall prescribe rules requiring each annual report required by section 13(a) or 15(d) of the Securities Exchange Act of 1934 to contain an internal control report, which shall--
> (1) state the responsibility of management for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and
> (2) contain an assessment, as of the end of the most recent fiscal year of the issuer, of the effectiveness of the internal control structure and procedures of the issuer for financial reporting.
>
> **(b) Internal Control Evaluation and Reporting.** With respect to the internal control assessment required by subsection (a), each registered public accounting firm that prepares or issues the audit report for the issuer shall attest to, and report on, the assessment made by the management of the issuer. An attestation made under this subsection shall be made in accordance with standards for attestation engagements issued or adopted by the Board. Any such attestation shall not be the subject of a separate engagement."

Source: SEC

It is important to define what a small public company is in terms of dollar market capitalization amount. Referring to Table 1 on page 6, smaller public companies have a market capitalization less than $781.1 million. Large cap public companies have a market cap greater than $787.1 million. Market capitalization, referred to as market cap or cap, is the total dollar market value of all of company's outstanding shares. It is calculated by multiplying a company's shares outstanding by the current spot/market price of those shares. It gives a rough estimate of a company's size.

Table 1: Dollar Amount Determining Company Size

	Market Capitalization Cutoff	**Percentage of Total U.S. Equity Market Capitalization**	**Percentage of All U.S. Public Companies**
Microcap Companies	<$128.2 M	1%	52.6%
Smallcap Companies	$128.2-$787.1 M	5%	25.9%
Smaller Public Companies	<$781.1 M	6%	78.5%
Larger Public Companies	>787.1 M	94%	21.5%

Source: "Sarbanes-Oxley's Effects on Small Firms by Ehud Kamar"

The technology sector, that this paper is centered around, is defined as category of stocks relating to the research, development and distribution of technologically based goods and services. This sector contains businesses revolving around the manufacturing of electronics, creation of software, computers or products and services.

The Finance Executive Internal (FEI) Survey provides an annual survey on SOX Section 404 costs. In 2006 there was a study that indicated that "200 companies with average revenues of $6.8 billion had an average compliance cost of $2.9 million or 0.043% of revenue" (Advisory). From this study, the companies were asked if they benefited from SOX compliance Section 404, only 22% of the companies agreed. Some of these costs included external auditor fees, directors and officers (D&O) insurance, board compensation, lost productivity, and legal costs. Smaller companies under $251 million (small cap), according to the survey, thought that they should be exempt from SOX Section 404. Smaller companies had more of a burden to comply with SOX due the significant amount of money and resources for compliance with SOX would have. This cost is borne across all publically traded companies and therefore cannot be diversified away by the investor. Another study by CRA International surveyed companies with

a market capitalization of $75-$700 million (small cap); SOX Section 404 costs averaged $1.5 million for small firms. For larger firms with a market cap greater than 700 million (large cap) had compliance costs of $7.3 million. The U.S. Government Accountability Office (GAO) reported similarly that small firms experienced a greater increase in audit-related costs than large firms since the enactment of Sarbanes Oxley. This report also stated that Chief Financial Officers had spent "90% of their time on compliance, forcing them to defer from investments", which would cost the company in what would have been a possibility of more revenue.

Table 2: Median Audit Fees as a Percentage of Revenues

Market Capitalization (in $ millions)	Median Audit Fees As a % of 2003 Revenues		Median Audit Fees as a % of 2004 Revenues
		Firms Not Filing Internal Control Reports	Firms Filing Internal Control Reports
$0-$75	0.64	0.79	1.14
$75-$250	0.29	0.35	0.56
$250-500	0.18	0.26	0.4
$500-$700	0.15	0.2	0.3
$700-$1000	0.13	0.12	0.25
>$1,000	0.07	0.07	0.13

Source: GAO (2006)

Part I: Hypothesis

My testable hypothesis for this paper is that compliance with Section 404 of the Sarbanes-Oxley Act had an adverse effect of small cap technology company's stock prices. The testable hypothesis for this paper will use a comparable company analysis of 45 larger public tech firms in comparison with their smaller counterpart. Smaller firms are more likely to have more "ineffective internal controls than large firms" (Bar). Small firms in compliance with Section 404 experienced disproportionally large increase in audit fees due to the costs associated with

establishing, maintaining, and evaluating internal controls over the financial reporting. The increased demand for accounting services following the compliance with SOX raised audit costs, which hurt smaller firms compared to large cap companies in the same industry. Also "the enactment of SOX caused director fees as percentage of net sales to increase significantly more for small firms than for large ones" (Press Release). This leads to more attentiveness on compliance and discourages business risk which halts business growth, thus hurting earnings and stock prices alike. This paper will break this down even further specifically targeted at both large and small cap technology companies and analyze and interpret the effects on the firm's intrinsic value both in Pre and Post Sarbanes-Oxley time periods.

Section III: Methodology

In this paper, I used a comparable company statistics model to show the Pre and Post Sarbanes-Oxley era's results on 45 smaller public technology firms and their 45 larger counterparts. Comparable company statistics is a process used to evaluate the value of a company using the metrics of other businesses in the same industry. Comparable company analysis operates under the assumption that similar companies will have similar valuations multiples giving that they are in a related industry. The valuation multiple used in this model is Price-to-EBITDA Ratio, also referred to as the P/EBITDA ratio. P/EBITDA Ratio is a valuation ratio of a company's share price compared to its earnings before interest, taxes, depreciation, and amortization. In general, a high P/EBITDA would indicate that the company is able to keep its earnings at a good level through efficient processes that keep certain expenses low. This ratio is used instead of the price-to-earnings ratio (P/E) because it removes the manipulations of financing and accounting activities to give more a realistic valuation. However, the P/EBITDA ratio doesn't tell us the whole story by itself. It's usually more useful to compare the P/EBITDA

ratios of one company to other companies in the same industry, to the market in general or against the company's own historical P/EBITDA. It would not be useful for investors using the P/EBITDA ratio as a basis for their investment to compare the P/EBITDA of a technology company (high P/EBITDA) to a utility company (low P/EBITDA) as each industry has much different growth prospects. The P/EBIDA is sometimes referred to as the "multiple", because it shows how much investors are willing to pay per dollar of earnings before the effects of interest, taxes, depreciation, and amortization. As stated before the P/EBITDA ratio is only useful if compared to other companies or other benchmarks within the same industry. Referring back to the Literature Review, Section 404 of the SOX Act was created in 2002. The SEC did not however start enforcing this act until 2003. This is important to this paper to use a Pre-SOX era as a benchmark. For both the 45 larger and 45 smaller tech companies alike, the benchmark years takes an average of the years January 1, 1999 to January 1, 2001. However, even though SOX was created in the early 2000s, smaller firms did not have to comply until 2007-2008. This is important to the paper because the years January, 1 2007 to January 1, 2009 are considered to the Post-SOX era.

Other variables that should be defined as part of the calculation for the P/EBITDA ratio are stock price, EBITDA, shares outstanding, and EBITDA per share. Stock price is averaged into two years of the firm's historical end of day price that was traded on an exchange from the years January 1, 1999 to January 1, 2001 (Pre SOX) and January 1, 2007 January 1, 2009 (Post SOX). EBITDA is essentially the net income minus any expenses but excludes tax, interest, depreciation, and amortization. It is an indicator of a company's financial performance and is useful for this model because EBITDA is harder to manipulate compared to the bottom line (net income). Shares outstanding are the current shares that are actively traded in the market at that

given day and they fluctuate on a day to day basis. It is important to note for this paper, these three variables are a two year average of the Pre and Post SOX periods as stated above. Another important variable is earnings per share, also known as EBITDA per share. EBITDA per share shows the portion of a company's earnings before interest, taxes, depreciation, and amortization allocated to each outstanding share of common stock. Finally the last variable used is Intrinsic Value. Intrinsic value of a company is based on the underlying perception of its true value, including all aspects of the business, which may differ from current market value or what it is currently being traded at.

The model of this paper is set up comparing 45 large public technology firms with 45 small public technology firms. The benchmark years as stated before are January 1, 1999 to January 1, 2001 for Pre Sarbanes-Oxley periods. There is a three step process in finding the average intrinsic values. The model is set up to take the two year average of stock price, EBITDA, and outstanding number of shares to find the P/EBITDA Ratio. In this paper, the Price-to-EBITDA Ratio (P/EBITDA) is calculated as:

i. P/EBITDA = Two Year Average Stock Price / (Two Year Average EBITDA / Two Year Average Number of Shares Outstanding)

After having the two year average P/EBITDA ratio, this will be multiplied by the cumulative two year average of EBITDA per share of each firm to find the average intrinsic value for both large and small cap technology firms alike. EBITDA per share is calculated as:

ii. EBITDA Per Share = (Two Year Average EBITDA / Two Year Average Outstanding Shares)

After the EBTIDA per share and P/EBITDA are calculated, the next step in the model is to find the intrinsic value average of the three firms. Intrinsic value is calculated as:

iii. Intrinsic Value = (Average P/EBITDA * Average EBITDA Per Share)

Exhibit 1 on page 11 shows how the model will be set up. This specific exhibit shows the Pre Sox eras for both 45 small cap and 45 large cap firms. Another table identical to Exhibit 1 is created for the Post SOX era for both the small and large cap tech firms. After find the intrinsic value for both the Pre and Post Sarbanes-Oxley data, each is compared to its benchmark (1999-2001) to find the rate of change from the benchmark. If my hypothesis is correct, small cao public technology firms will grow at a smaller rate or be negatively affected than the large cap public technology companies. Small Cap stocks outperform Large Cap stocks in the long run is my reasoning in determining the different value, rate of change and also basis for my hypothesis. By this assumption and the compliance with Section 404 of SOX, the data should show small cap tech company's intrinsic values decreasing.

Exhibit 1: Large Cap vs. Small Cap Tech Firm's Pre-SOX Average Intrinsic Value

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	34.86	13.4	28.36	39.39	0.47
3D SYSTEMS CORP	DDD	3.34	1.6	34.76	18.94	0.05
VIASAT INC	VSAT	17.02	4.2	17.64	6.83	0.24
ARRIS GROUP INC	ARRS	35.37	18.0	37.10	20.17	0.48
TYLER TECHNOLOG	TYL	4.35	5.8	41.79	7.70	0.14
MICROSEMI CORP	MSCC	4.98	5.8	47.04	11.10	0.12
MANHATTAN ASSOC	MANH	21.57	3.8	24.44	42.66	0.16
MKS INSTRUMENTS	MKSI	27.58	17.5	25.43	18.18	0.69
CACI INTL-A	CACI	10.63	10.7	22.33	5.83	0.48
ELEC FOR IMAGING	EFII	40.95	33.2	55.10	19.15	0.60
PROGRESS SOFTWAR	PRGS	11.05	14.2	52.42	10.27	0.27
CIRRUS LOGIC INC	CRUS	16.56	-16.4	63.71	25.99	-0.26
POWER INTEGRATIO	POWI	27.53	7.2	26.49	27.33	0.27
MICROSTRATEGY	MSTR	424.91	-13.6	7.72	113.71	-1.76
QUALITY SYSTEMS	QSII	0.93	1.5	49.70	8.71	0.03
NETSCOUT SYSTEMS	NTCT	19.80	5.4	24.08	15.94	0.22

DIODES INC	DIOD	3.59	3.8	26.35	8.39	0.14
FORRESTER RESEAR	FORR	35.26	5.7	19.26	33.27	0.30
KULICKE & SOFFA	KLIC	18.59	21.4	47.58	40.47	0.45
TRIQUINT SEMICON	TQNT	27.58	20.8	69.69	49.96	0.30
CABOT MICROELEC	CCMP	43.86	15.7	23.77	17.26	0.66
INSIGHT ENTERPRI	NSIT	23.11	19.9	39.39	14.16	0.50
SCANSOURCE INC	SCSC	8.60	5.1	22.21	10.73	0.23
CSG SYSTEMS INTL	CSGS	40.63	33.8	51.73	18.15	0.65
ATMI INC	ATMI	30.66	11.5	27.45	31.43	0.42
ADV ENERGY INDS	AEIS	39.25	13.6	28.49	50.93	0.48
HARMONIC INC	HLIT	44.92	24.0	35.54	79.80	0.67
DYCOM INDS	DY	36.24	30.3	38.74	13.84	0.78
BROOKS AUTOMATIO	BRKS	36.64	6.6	13.78	50.69	0.48
BLUCORA INC	BCOR	317.92	-8.1	24.00	498.01	-0.34
INTERMEC INC	IN	11.63	30.0	55.46	4.28	0.54
EXAR CORP	EXAR	24.25	2.9	31.85	85.52	0.09
EPIQ SYSTEMS INC	EPIQ	3.41	1.5	15.67	10.43	0.09
COMTECH TELECOMM	CMTL	5.55	2.0	12.74	10.84	0.16
RUDOLPH TECHNOL	RTEC	34.43	5.1	15.26	27.65	0.33
VASCO DATA INTL	VDSI	8.30	-0.2	25.23	912.44	-0.01
CIBER INC	CBR	17.25	20.2	57.31	11.93	0.35
NANOMETRICS INC	NANO	21.53	2.1	9.80	74.85	0.21
SUPERTEX INC	SUPX	23.33	4.0	12.27	18.56	0.32
MERCURY SYSTEMS	MRCY	24.96	8.4	20.92	15.92	0.40
VOXX INTERNATION	VOXX	19.90	10.9	20.11	11.83	0.54
AGILYSYS INC	AGYS	12.40	32.1	27.06	2.72	1.18
DIGI INTL INC	DGII	9.11	4.6	15.08	6.84	0.30
COHU INC	COHU	23.71	10.3	19.93	28.80	0.51
KOPIN CORP	KOPN	18.15	1.9	56.11	248.64	0.03
Average					**61.78**	**0.29**
Intrinsic Value						**$17.87**

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	18.65	146.3	624.90	19.93	0.23
MICROSOFT CORP	MSFT	40.94	2979.2	10309.96	37.09	0.29
IBM	IBM	109.15	4364.8	1791.01	11.89	2.44
ORACLE CORP	ORCL	22.95	793.1	5675.69	44.55	0.14

INTEL CORP	INTC	44.90	3608.6	6672.33	21.94	0.54
QUALCOMM INC	QCOM	33.57	208.0	1355.07	56.76	0.15
CISCO SYSTEMS	CSCO	46.48	1237.9	6778.56	70.04	0.18
EMC CORP/MA	EMC	52.26	538.6	2094.09	69.33	0.26
HEWLETT-PACKARD	HPQ	42.20	1263.2	2006.12	17.66	0.63
YAHOO! INC	YHOO	52.59	63.2	1034.79	379.67	0.06
DELL INC	DELL	41.04	687.7	2563.70	41.61	0.27
ADOBE SYS INC	ADBE	20.17	96.9	482.29	26.86	0.20
COGNIZANT TECH-A	CTSH	2.66	5.7	221.19	29.53	0.03
CORNING INC	GLW	47.60	347.1	784.55	28.91	0.44
INTUIT INC	INTU	20.42	49.4	390.59	44.04	0.13
BROADCOM CORP-A	BRCM	81.29	47.9	314.41	167.31	0.15
MOTOROLA SOLUTIO	MSI	120.58	1117.6	284.35	8.60	3.93
SYMANTEC CORP	SYMC	5.21	52.5	468.28	14.05	0.11
CERNER CORP	CERN	6.59	13.3	135.16	18.55	0.10
APPLIED MATERIAL	AMAT	27.87	576.0	1557.25	35.25	0.37
ANALOG DEVICES	ADI	46.93	155.6	347.18	32.30	0.45
SANDISK CORP	SNDK	24.08	17.4	120.69	66.52	0.14
CITRIX SYSTEMS	CTXS	36.29	47.0	179.96	34.38	0.26
NETAPP INC	NTAP	51.14	31.8	300.22	135.88	0.11
CA INC	CA	46.99	645.9	550.15	10.45	1.17
ALTERA CORP	ALTR	31.46	104.7	396.86	34.69	0.26
MICRON TECH	MU	43.11	469.6	541.93	34.29	0.87
XILINX INC	XLNX	49.92	98.8	317.78	50.72	0.31
KLA-TENCOR CORP	KLAC	43.60	61.0	181.57	48.69	0.34
JUNIPER NETWORKS	JNPR	102.93	30.7	313.53	1813.07	0.10
AUTODESK INC	ADSK	7.69	43.9	233.83	10.72	0.19
LINEAR TECH CORP	LLTC	43.31	94.7	310.02	39.27	0.31
NVIDIA CORP	NVDA	5.44	26.0	372.69	38.41	0.07
COMPUTER SCIENCE	CSC	71.63	308.5	164.50	10.25	1.88
VERISIGN INC	VRSN	104.92	4.6	126.07	3697.19	0.04
LAM RESEARCH	LRCX	24.87	37.1	120.11	32.29	0.31
MICROCHIP TECH	MCHP	19.07	52.4	175.54	18.96	0.30
BMC SOFTWARE INC	BMC	42.59	138.4	239.70	17.35	0.58
F5 NETWORKS	FFIV	31.57	0.6	41.32	46.70	0.01
HARRIS CORP	HRS	13.66	33.3	148.15	16.23	0.22
LSI CORP	LSI	33.37	158.5	299.31	17.84	0.53
JDS UNIPHASE	JDSU	506.48	90.6	84.33	143.68	1.07
PITNEY BOWES INC	PBI	48.48	358.0	262.62	9.15	1.36
TERADYNE INC	TER	49.58	120.5	171.38	27.46	0.70
ADV MICRO DEVICE	AMD	19.54	189.5	300.43	14.13	0.63

Average					**167.65**	**0.51**
Intrinsic Value						**$85.16**

I used daily stock price returns data from January 1999 – January 2001 and January 2007 – January 2009 for my analysis collected from Bloomberg. The dependent variable in my paper is Intrinsic Value. The independent variables are P/EBITDA and EBITDA per Share. If you break down these two independent variables, you can find three more independent variables such as stock price, EBITDA, and number of shares outstanding. All of these variables are a cumulative two year average.

Section IV: Empirical Results

Table 3 on page 14-20 shows descriptive statistics of the two year average end of day historical stock prices of the Pre and Post Sarbanes Oxley eras. Descriptive statistics in this paper are used to provide a useful summary of security prices when performing empirical and analytical analysis, as they provide a historical account on stock price behavior. Table 3 on page 14-20 breaks down into the Pre and Post Sarbanes-Oxley eras. As stated before, the Pre SOX period spanned from January 1, 1999 to January 1, 2001 and the Post SOX era ranged from January 1, 2007 to January 1, 2009. Table 3 on page 14-20 is broken down further into market capitalization, or size of the technology firms that are used. Although useful, this table is hard to compare how the small and large cap firms reacted when compliance was enforced in 2007.

Table 3: Descriptive Statistics

PRE SARBANES-OXLEY								
SMALL CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**
CYMI	34.83	33.94	12.16	16.00	65.25	23.70	44.63	504

DDD	3.34	2.75	1.64	1.42	7.23	1.90	4.80	504
VSAT	17.00	15.72	11.07	4.00	49.75	7.29	24.05	504
ARRS	35.34	37.63	12.94	7.75	59.88	25.79	45.47	504
TYL	4.35	4.63	1.52	1.13	8.00	2.94	5.75	504
MSCC	4.97	3.06	3.20	1.67	12.00	2.05	7.94	503
MANH	21.58	16.38	16.98	3.53	71.31	8.04	29.66	504
MKSI	27.55	23.42	11.60	12.00	61.50	18.50	35.13	444
CACI	10.63	10.67	1.52	8.06	15.00	9.47	11.30	504
EFII	40.95	45.97	14.88	11.94	65.13	26.19	53.34	504
PRGS	11.05	10.40	2.54	6.98	19.78	9.27	12.02	504
CRUS	16.54	13.88	9.66	6.31	46.56	9.06	19.44	504
POWI	27.50	24.22	13.68	9.34	65.63	15.38	36.66	504
MSTR	424.36	227.81	504.10	77.50	3130.00	147.66	415.63	504
QSII	0.93	0.91	0.31	0.45	2.13	0.78	1.01	483
NTCT	19.77	19.00	5.32	10.00	36.50	14.95	24.20	352
DIOD	3.59	3.44	2.30	0.80	9.78	1.35	5.37	499
FORR	35.22	30.84	18.46	11.19	79.00	17.88	50.80	504
KLIC	18.57	14.22	8.72	8.91	43.00	12.06	24.25	504
TQNT	27.53	27.02	18.50	2.67	65.37	9.69	43.69	504
CCMP	43.73	44.88	9.07	20.00	65.13	37.50	48.81	189
NSIT	23.10	22.13	6.18	13.00	42.79	18.52	26.15	504
SCSC	8.59	8.50	2.98	4.16	17.75	5.72	10.44	503
CSGS	40.62	41.41	10.58	20.31	73.69	33.95	48.00	504
ATMI	30.65	29.53	9.52	15.00	60.00	23.25	36.50	504
AEIS	39.22	37.53	14.10	15.88	73.25	27.70	49.23	504
HLIT	44.85	30.34	34.08	5.69	152.38	17.45	66.96	504
DY	36.22	32.31	9.78	20.71	56.81	28.09	45.36	504
BRKS	36.60	27.00	18.81	14.63	89.69	22.94	52.13	504
BCOR	317.38	187.81	277.90	41.56	1305.31	112.85	492.66	504
IN	11.64	13.00	3.91	3.25	19.00	7.94	14.13	504
EXAR	24.22	19.75	17.06	4.56	63.00	8.70	39.25	504
EPIQ	3.41	3.22	0.74	2.19	5.67	2.85	3.77	500
CMTL	5.54	5.75	2.22	1.78	11.86	3.94	7.28	503
RTEC	34.37	33.50	6.89	16.00	57.00	28.63	39.00	287
VDSI	8.29	6.00	5.43	2.94	25.00	3.88	11.75	500
CBR	17.27	18.00	6.23	4.38	29.44	13.38	21.30	504
NANO	21.50	17.81	14.53	5.63	59.00	8.13	33.34	504
SUPX	23.31	19.25	12.57	8.63	53.25	12.38	32.13	504

MRCY	24.94	25.81	12.20	8.13	67.13	13.29	32.72	504
VOXX	19.87	15.66	13.75	5.94	70.00	9.38	25.88	504
AGYS	12.40	13.13	2.57	6.25	18.44	10.88	14.11	504
DGII	9.11	8.25	2.80	5.00	17.25	6.75	11.38	504
COHU	23.68	19.81	11.36	10.84	59.50	15.25	29.20	504
KOPN	18.12	14.53	13.14	3.27	49.13	5.97	30.00	504

*Stock Prices from January 1, 1999 - January 1, 2001

POST SARBANES-OXLEY								
SMALL CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**
CYMI	33.74	35.32	7.60	18.90	46.13	26.88	40.70	502
DDD	5.28	5.10	1.70	1.99	8.74	3.87	6.71	502
VSAT	26.90	28.26	5.50	15.42	36.16	21.51	32.10	502
ARRS	10.70	9.79	3.58	4.54	17.82	7.75	14.21	502
TYL	13.90	13.93	1.31	11.01	17.17	12.81	14.91	502
MSCC	22.89	23.11	3.43	11.33	29.86	21.11	25.50	502
MANH	25.03	26.11	4.15	13.82	30.67	23.21	28.14	502
MKSI	21.60	21.89	3.69	12.35	28.07	19.23	24.13	502
CACI	47.03	46.97	3.61	37.67	57.21	44.61	50.15	502
EFII	19.47	20.66	6.31	8.16	29.78	14.49	25.55	502
PRGS	19.22	19.96	2.42	11.81	22.60	18.61	20.81	502
CRUS	6.27	6.22	1.46	2.35	8.93	5.21	7.51	502
POWI	26.92	27.01	4.47	14.74	34.70	23.87	30.81	502
MSTR	81.43	76.56	25.90	31.88	132.40	65.31	100.86	502
QSII	18.08	18.41	2.38	13.50	23.67	15.91	20.21	502
NTCT	10.13	9.36	1.94	6.19	15.85	8.74	11.56	502
DIOD	23.87	24.84	7.07	3.44	34.71	23.22	28.19	502
FORR	27.31	27.00	3.01	19.55	35.66	25.28	28.73	502
KLIC	6.93	6.95	2.50	1.14	11.89	5.33	9.10	502
TQNT	5.07	5.06	1.04	1.69	7.04	4.60	5.73	502
CCMP	34.71	34.35	5.03	20.23	46.44	32.39	37.62	502
NSIT	17.15	18.02	5.52	3.40	27.78	13.25	20.22	502
SCSC	28.64	28.93	4.73	14.01	37.19	27.11	31.78	502
CSGS	18.82	18.18	5.54	10.55	28.22	13.27	24.72	502
ATMI	27.19	29.62	6.29	9.32	35.11	26.38	31.05	502
AEIS	15.77	14.98	4.45	5.94	25.68	13.17	18.59	502

HLIT	8.91	8.92	1.53	3.91	12.69	8.25	9.95	502
DY	20.59	23.00	7.75	5.13	32.36	14.12	27.23	502
BRKS	12.16	12.35	3.95	2.58	19.96	9.57	15.25	502
BCOR	15.40	12.94	6.34	6.57	27.71	9.43	21.96	502
IN	21.32	22.20	3.88	9.68	29.62	19.95	23.91	502
EXAR	10.08	8.44	2.94	5.04	15.10	7.72	13.28	502
EPIQ	15.18	15.52	2.31	10.66	20.41	13.31	16.53	502
CMTL	44.75	45.04	5.15	33.21	57.09	40.75	48.25	502
RTEC	11.46	10.74	4.21	2.20	18.06	9.05	15.70	502
VDSI	18.14	16.43	7.96	6.64	42.95	11.66	22.72	502
CBR	6.69	6.92	1.38	3.03	8.91	5.42	7.86	502
NANO	6.19	6.66	2.52	0.85	11.51	5.57	7.73	502
SUPX	29.77	31.25	6.79	17.70	45.29	23.14	34.62	502
MRCY	10.21	10.72	3.30	2.55	16.43	7.68	13.03	502
VOXX	10.84	10.66	2.83	3.36	15.99	9.60	12.83	502
AGYS	14.55	13.92	5.62	2.09	23.46	11.39	19.29	502
DGII	12.04	12.30	2.47	7.13	17.13	10.25	14.18	502
COHU	17.19	17.07	2.93	9.70	23.56	15.17	19.53	502
KOPN	3.14	3.23	0.62	1.46	4.45	2.82	3.58	502

*Stock Prices from January 1, 2007 - January 1, 2009

PRE SARBANES-OXLEY								
LARGE CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**
AAPL	18.67	18.31	8.25	7.00	36.05	10.58	25.98	503
MSFT	40.95	40.66	7.47	20.75	59.56	35.25	46.19	503
IBM	109.19	110.50	13.56	81.38	137.88	98.25	119.63	503
ORCL	22.98	24.42	13.51	5.36	46.31	9.28	36.88	503
INTC	44.93	40.53	14.06	25.25	74.88	32.94	58.78	503
QCOM	33.63	31.47	20.82	3.57	89.66	17.78	46.41	503
CSCO	46.53	49.81	15.95	23.78	80.06	30.78	62.59	503
EMC	52.32	51.35	23.98	21.89	100.99	29.31	72.38	503
HPQ	42.23	41.80	10.90	25.70	67.44	32.44	51.56	503
YHOO	52.64	45.34	21.10	12.81	118.75	37.97	65.84	503
DELL	41.05	41.75	8.34	16.63	58.13	38.13	46.31	503
ADBE	20.20	17.14	10.83	4.97	41.63	10.66	30.31	503
CTSH	2.67	2.95	1.39	0.84	5.82	1.19	3.67	503

GLW	47.66	39.33	28.43	15.25	113.33	21.65	68.42	503
INTU	20.44	17.78	6.86	11.50	42.56	14.67	26.28	503
BRCM	81.41	73.83	50.17	16.69	182.42	37.00	125.29	503
MSI	120.66	113.02	34.17	64.15	220.70	95.92	136.54	503
SYMC	5.21	5.13	2.14	1.63	10.10	3.42	6.95	503
CERN	6.59	5.56	3.15	3.13	15.48	4.16	8.00	503
AMAT	27.91	24.06	12.12	12.44	57.44	17.28	40.16	503
ADI	47.00	43.44	26.96	12.53	101.38	22.38	70.50	503
SNDK	24.12	21.88	14.85	3.44	81.00	11.56	33.72	503
CTXS	36.31	26.19	22.65	14.31	118.56	21.41	46.50	503
NTAP	51.22	42.09	38.82	9.91	148.63	14.00	83.50	503
CA	47.00	49.31	14.13	18.69	75.00	33.31	57.75	503
ALTR	31.49	27.25	13.89	12.16	64.81	19.28	43.22	503
MU	43.14	35.56	20.40	17.25	96.56	30.81	57.00	503
XLNX	49.98	44.50	23.96	16.25	97.94	29.28	72.44	503
KLAC	43.64	35.94	16.84	21.84	97.44	29.66	55.19	503
JNPR	103.19	99.84	61.58	16.48	243.00	46.00	146.88	384
ADSK	7.68	7.11	2.09	4.28	13.72	6.02	9.30	503
LLTC	43.35	39.97	14.66	21.25	72.94	30.41	55.13	503
NVDA	5.45	3.53	4.06	1.36	14.41	1.74	9.47	491
CSC	71.65	69.50	9.27	53.81	96.56	64.88	77.44	503
VRSN	105.09	99.00	66.68	15.88	253.00	38.19	169.83	503
LRCX	24.91	21.94	12.58	8.42	55.56	14.50	35.06	503
MCHP	19.08	18.50	6.59	8.04	32.33	14.04	24.86	503
BMC	42.58	43.75	16.66	13.63	85.19	30.19	53.00	503
FFIV	31.64	26.00	17.42	4.75	77.94	18.25	45.47	399
HRS	13.65	14.20	2.08	8.49	18.42	11.98	15.22	503
LSI	33.42	29.13	17.37	9.47	88.25	20.80	40.75	503
JDSU	507.35	496.00	340.15	63.50	1172.25	163.31	827.75	503
PBI	48.45	46.35	12.88	24.89	69.41	37.82	62.09	503
TER	49.63	38.50	22.89	22.81	110.00	31.25	69.13	503
AMD	19.55	14.75	11.94	7.38	47.50	9.25	27.41	503

*Stock Prices from January 1, 1999 - January 1, 2001

POST SARBANES-OXLEY								
LARGE CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**

AAPL	135.46	132.75	35.02	80.49	199.83	98.97	169.29	502
MSFT	28.53	28.79	3.71	17.53	37.06	27.42	30.43	502
IBM	107.99	108.63	12.98	71.74	130.00	99.19	117.33	502
ORCL	19.77	19.86	1.90	15.40	23.52	18.59	21.30	502
INTC	21.69	22.08	3.47	12.23	27.98	20.16	24.12	502
QCOM	42.01	41.83	4.83	29.21	56.37	39.21	44.03	502
CSCO	25.50	25.99	4.22	14.47	34.08	23.59	27.90	502
EMC	15.77	15.51	3.20	8.85	25.39	13.96	18.06	502
HPQ	44.74	45.60	4.71	29.34	53.41	42.21	47.78	502
YHOO	24.31	26.40	5.74	8.95	33.63	21.34	28.38	502
DELL	22.44	23.72	5.13	9.30	30.60	19.70	26.35	502
ADBE	38.62	40.71	6.28	20.44	48.00	36.83	42.61	502
CTSH	33.35	33.04	8.22	14.68	47.44	28.85	40.16	502
GLW	21.66	23.40	5.02	7.82	27.77	20.77	24.86	502
INTU	28.58	29.08	2.44	20.19	32.70	27.47	30.29	502
BRCM	27.10	27.70	6.73	13.64	42.40	21.67	32.76	502
MSI	53.40	61.72	21.06	12.90	81.71	37.29	73.29	502
SYMC	18.01	17.95	2.42	10.05	22.65	17.00	19.74	502
CERN	24.80	24.67	3.82	15.79	32.73	22.56	28.14	502
AMAT	18.09	18.87	3.06	8.14	22.96	17.81	19.85	502
ADI	31.51	32.74	5.78	16.10	40.56	28.23	36.09	502
SNDK	32.36	32.44	14.47	5.32	58.10	20.77	43.90	502
CTXS	32.31	32.73	4.95	19.54	43.86	30.05	35.04	502
NTAP	26.12	25.27	7.38	10.39	40.49	22.20	30.86	502
CA	23.66	24.47	3.15	14.37	28.21	22.49	25.86	502
ALTR	20.52	20.70	2.69	13.40	25.45	18.74	22.82	502
MU	8.44	8.22	3.36	1.69	14.23	5.52	11.58	502
XLNX	24.13	24.80	3.27	14.61	30.18	22.37	26.34	502
KLAC	44.50	46.22	11.50	15.19	62.46	39.09	54.13	502
JNPR	25.30	25.21	5.68	13.84	37.65	20.57	28.72	502
ADSK	38.56	39.85	8.63	14.37	51.04	33.81	44.99	502
LLTC	31.60	32.12	4.55	18.56	38.74	30.18	34.88	502
NVDA	21.80	21.92	8.77	5.90	39.54	13.85	28.95	502
CSC	47.89	49.02	8.60	24.41	61.79	43.28	54.77	502
VRSN	30.55	32.03	5.76	17.04	42.22	25.93	34.55	502
LRCX	42.03	43.23	10.63	15.00	59.98	37.13	51.69	502
MCHP	32.75	33.17	5.53	17.12	42.06	30.46	36.89	502
BMC	31.86	32.09	3.51	22.00	40.40	30.39	33.84	502

FFIV	30.99	31.39	7.39	18.05	45.60	23.44	37.22	502
HRS	48.50	48.34	7.29	27.03	62.19	45.84	53.77	502
LSI	6.62	6.65	1.94	2.46	10.48	5.26	7.86	502
JDSU	12.28	13.28	3.57	2.21	17.78	11.01	14.66	502
PBI	38.84	37.58	7.61	21.52	48.66	34.75	46.16	502
TER	12.22	12.41	3.94	2.97	18.30	9.83	15.61	502
AMD	9.40	7.68	4.52	1.80	20.18	5.92	13.64	502

*Stock Prices from January 1, 2007 - January 1, 2009

To make more use of what each of these descriptive statistics are telling you, I did a comparative period analysis from the Post SOX period to the Pre SOX period, also known as the benchmark. I took the Post SOX stock price data and subtracted it from the base year and then proceeded to divide by the base year to find the percentage change from the Pre to Post SOX duration.

Table 4: Percentage Change of the Pre to Post SOX Duration

% Δ FROM PRE TO POST SOX PERIOD								
SMALL CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**
CYMI	-3.12%	4.06%	-37.50%	18.13%	-29.30%	13.39%	-8.80%	-0.40%
DDD	58.29%	85.33%	4.10%	40.47%	20.85%	104.09%	39.81%	-0.40%
VSAT	58.24%	79.79%	-50.28%	285.50%	-27.32%	195.06%	33.49%	-0.40%
ARRS	-69.72%	-73.98%	-72.37%	-41.42%	-70.24%	-69.97%	-68.74%	-0.40%
TYL	219.39%	201.19%	-13.72%	878.67%	114.63%	336.09%	159.30%	-0.40%
MSCC	360.35%	654.45%	7.09%	577.67%	148.83%	931.44%	221.23%	-0.20%
MANH	16.03%	59.42%	-75.56%	291.36%	-56.99%	188.65%	-5.11%	-0.40%
MKSI	-21.61%	-6.56%	-68.20%	2.92%	-54.36%	3.95%	-31.32%	13.06%
CACI	342.52%	340.08%	136.96%	367.22%	281.40%	371.07%	343.64%	-0.40%
EFII	-52.44%	-55.06%	-57.59%	-31.64%	-54.27%	-44.68%	-52.11%	-0.40%
PRGS	73.92%	91.97%	-4.66%	69.17%	14.25%	100.72%	73.14%	-0.40%
CRUS	-62.11%	-55.17%	-84.87%	-62.77%	-80.82%	-42.50%	-61.35%	-0.40%
POWI	-2.13%	11.50%	-67.29%	57.75%	-47.12%	55.27%	-15.94%	-0.40%
MSTR	-80.81%	-66.39%	-94.86%	-58.86%	-95.77%	-55.77%	-75.73%	-0.40%
QSII	1841.46%	1931.61%	678.13%	2879.47%	1013.88%	1936.03%	1905.48%	3.93%

NTCT	-48.78%	-50.76%	-63.61%	-38.10%	-56.58%	-41.55%	-52.25%	42.61%
DIOD	565.69%	621.17%	207.40%	328.66%	254.99%	1625.87%	425.01%	0.60%
FORR	-22.47%	-12.46%	-83.72%	74.75%	-54.86%	41.35%	-43.45%	-0.40%
KLIC	-62.67%	-51.12%	-71.34%	-87.20%	-72.35%	-55.81%	-62.49%	-0.40%
TQNT	-81.60%	-81.28%	-94.40%	-36.63%	-89.23%	-52.52%	-86.90%	-0.40%
CCMP	-20.64%	-23.45%	-44.53%	1.15%	-28.69%	-13.63%	-22.93%	165.61 %
NSIT	-25.79%	-18.55%	-10.71%	-73.85%	-35.08%	-28.46%	-22.66%	-0.40%
SCSC	233.31%	240.29%	59.03%	237.08%	109.52%	374.09%	204.46%	-0.20%
CSGS	-53.67%	-56.09%	-47.69%	-48.06%	-61.70%	-60.92%	-48.50%	-0.40%
ATMI	-11.31%	0.30%	-33.95%	-37.87%	-41.48%	13.47%	-14.92%	-0.40%
AEIS	-59.79%	-60.10%	-68.42%	-62.58%	-64.94%	-52.45%	-62.24%	-0.40%
HLIT	-80.14%	-70.60%	-95.52%	-31.25%	-91.67%	-52.74%	-85.14%	-0.40%
DY	-43.15%	-28.82%	-20.74%	-75.23%	-43.04%	-49.73%	-39.97%	-0.40%
BRKS	-66.77%	-54.26%	-78.98%	-82.36%	-77.74%	-58.28%	-70.74%	-0.40%
BCOR	-95.15%	-93.11%	-97.72%	-84.19%	-97.88%	-91.65%	-95.54%	-0.40%
IN	83.06%	70.73%	-0.85%	197.85%	55.89%	151.34%	69.29%	-0.40%
EXAR	-58.39%	-57.29%	-82.80%	10.47%	-76.03%	-11.35%	-66.17%	-0.40%
EPIQ	344.97%	381.66%	212.07%	387.83%	260.17%	366.56%	338.56%	0.40%
CMTL	707.62%	683.22%	131.69%	1768.04 %	381.32%	932.98%	562.91%	-0.20%
RTEC	-66.65%	-67.96%	-38.98%	-86.25%	-68.32%	-68.40%	-59.75%	74.91%
VDSI	118.73%	173.83%	46.69%	126.04%	71.80%	200.17%	93.38%	0.40%
CBR	-61.26%	-61.56%	-77.81%	-30.74%	-69.73%	-59.50%	-63.09%	-0.40%
NANO	-71.23%	-62.61%	-82.62%	-84.87%	-80.49%	-31.51%	-76.82%	-0.40%
SUPX	27.70%	62.34%	-46.00%	105.22%	-14.95%	87.01%	7.77%	-0.40%
MRCY	-59.08%	-58.49%	-72.92%	-68.62%	-75.52%	-42.21%	-60.18%	-0.40%
VOXX	-45.44%	-31.94%	-79.43%	-43.41%	-77.16%	2.40%	-50.42%	-0.40%
AGYS	17.35%	6.02%	118.73%	-66.56%	27.24%	4.74%	36.74%	-0.40%
DGII	32.09%	49.09%	-11.54%	42.60%	-0.70%	51.85%	24.66%	-0.40%
COHU	-27.40%	-13.87%	-74.20%	-10.55%	-60.40%	-0.54%	-33.12%	-0.40%
KOPN	-82.65%	-77.77%	-95.31%	-55.29%	-90.94%	-52.83%	-88.07%	-0.40%

% Δ FROM PRE TO POST SOX PERIOD								
LARGE CAP DESCRIPTIVE STATISTICS								
Ticker	**Mean**	**Median**	**Standard Deviation**	**Minimum**	**Maximum**	**25th Percentile**	**75th Percentile**	**Count**
AAPL	625.68%	624.89%	324.70%	1049.86 %	454.36%	835.62%	551.50%	-0.20%
MSFT	-30.33%	-29.19%	-50.30%	-15.52%	-37.78%	-22.21%	-34.11%	-0.20%

IBM	-1.09%	-1.69%	-4.21%	-11.84%	-5.71%	0.95%	-1.92%	-0.20%
ORCL	-14.00%	-18.68%	-85.92%	187.35%	-49.21%	100.30%	-42.24%	-0.20%
INTC	-51.73%	-45.52%	-75.35%	-51.56%	-62.63%	-38.79%	-58.98%	-0.20%
QCOM	24.92%	32.93%	-76.79%	718.14%	-37.13%	120.51%	-5.13%	-0.20%
CSCO	-45.20%	-47.82%	-73.53%	-39.15%	-57.43%	-23.36%	-55.43%	-0.20%
EMC	-69.86%	-69.80%	-86.65%	-59.56%	-74.86%	-52.38%	-75.05%	-0.20%
HPQ	5.93%	9.09%	-56.80%	14.14%	-20.80%	30.11%	-7.33%	-0.20%
YHOO	-53.81%	-41.78%	-72.80%	-30.15%	-71.68%	-43.80%	-56.90%	-0.20%
DELL	-45.34%	-43.19%	-38.44%	-44.06%	-47.35%	-48.33%	-43.10%	-0.20%
ADBE	91.21%	137.51%	-41.97%	311.37%	15.32%	245.62%	40.55%	-0.20%
CTSH	1150.47%	1020.80%	492.46%	1639.75%	714.71%	2329.05%	995.13%	-0.20%
GLW	-54.56%	-40.51%	-82.34%	-48.72%	-75.50%	-4.07%	-63.66%	-0.20%
INTU	39.83%	63.54%	-64.47%	75.57%	-23.17%	87.30%	15.23%	-0.20%
BRCM	-66.71%	-62.48%	-86.59%	-18.26%	-76.76%	-41.45%	-73.86%	-0.20%
MSI	-55.74%	-45.39%	-38.37%	-79.89%	-62.98%	-61.12%	-46.33%	-0.20%
SYMC	245.46%	250.24%	13.39%	518.46%	124.22%	396.80%	183.83%	-0.20%
CERN	276.44%	343.51%	21.16%	405.28%	111.34%	442.79%	251.78%	-0.20%
AMAT	-35.16%	-21.58%	-74.74%	-34.55%	-60.03%	3.03%	-50.58%	-0.20%
ADI	-32.94%	-24.63%	-78.55%	28.48%	-59.99%	26.15%	-48.82%	-0.20%
SNDK	34.16%	48.30%	-2.54%	54.76%	-28.27%	79.63%	30.19%	-0.20%
CTXS	-11.01%	24.98%	-78.17%	36.52%	-63.01%	40.38%	-24.65%	-0.20%
NTAP	-49.01%	-39.97%	-80.99%	4.88%	-72.76%	58.54%	-63.05%	-0.20%
CA	-49.66%	-50.38%	-77.70%	-23.10%	-62.39%	-32.50%	-55.22%	-0.20%
ALTR	-34.84%	-24.04%	-80.65%	10.23%	-60.73%	-2.81%	-47.20%	-0.20%
MU	-80.43%	-76.89%	-83.53%	-90.20%	-85.26%	-82.09%	-79.69%	-0.20%
XLNX	-51.73%	-44.27%	-86.33%	-10.09%	-69.18%	-23.60%	-63.64%	-0.20%
KLAC	1.97%	28.61%	-31.72%	-30.46%	-35.90%	31.79%	-1.92%	-0.20%
JNPR	-75.48%	-74.75%	-90.77%	-16.02%	-84.51%	-55.28%	-80.45%	30.73%
ADSK	402.05%	460.53%	313.17%	235.65%	272.04%	462.04%	383.87%	-0.20%
LLTC	-27.10%	-19.64%	-68.93%	-12.66%	-46.89%	-0.74%	-36.73%	-0.20%
NVDA	299.78%	520.73%	115.76%	332.36%	174.36%	693.79%	205.72%	2.24%
CSC	-33.16%	-29.47%	-7.19%	-54.64%	-36.01%	-33.29%	-29.27%	-0.20%
VRSN	-70.93%	-67.65%	-91.36%	7.34%	-83.31%	-32.10%	-79.66%	-0.20%
LRCX	68.73%	97.06%	-15.55%	78.22%	7.95%	156.07%	47.41%	-0.20%
MCHP	71.58%	79.30%	-16.01%	113.01%	30.08%	117.00%	48.38%	-0.20%
BMC	-25.19%	-26.65%	-78.91%	61.47%	-52.58%	0.65%	-36.16%	-0.20%
FFIV	-2.05%	20.73%	-57.58%	280.00%	-41.49%	28.44%	-18.15%	25.81%

HRS	255.18%	240.42%	250.74%	218.54%	237.54%	282.56%	253.21%	-0.20%
LSI	-80.20%	-77.17%	-88.81%	-74.02%	-88.12%	-74.71%	-80.71%	-0.20%
JDSU	-97.58%	-97.32%	-98.95%	-96.52%	-98.48%	-93.26%	-98.23%	-0.20%
PBI	-19.84%	-18.93%	-40.94%	-13.52%	-29.90%	-8.12%	-25.66%	-0.20%
TER	-75.37%	-67.77%	-82.79%	-86.98%	-83.36%	-68.54%	-77.42%	-0.20%
AMD	-51.94%	-47.93%	-62.11%	-75.59%	-57.52%	-36.05%	-50.25%	-0.20%

Table 4 on pages 20-23 is more useful in the comparable company analysis as it shows the rate of change of the different size technology firms from pre to post compliance period. From this analysis, it is clear that large cap technology companies had a bigger change from the Pre SOX compliance era. This corresponds with my hypothesis that smaller public technology firm's stock prices were hurt to increased costs due to compliance with Section 404 of the Sarbanes-Oxley Act of 2002.

My model intrinsic value valuation also backs up my testable hypothesis as well. Referencing to Exhibit 2 on pages 23-26, you can see that the large cap tech firms had a larger increase in the intrinsic value comparatively to small cap tech firms who had a decrease in their averaged intrinsic value.

Exhibit 2: Average Pre SOX Stock Price Valuation

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	34.86	13.4	28.36	39.39	0.47
3D SYSTEMS CORP	DDD	3.34	1.6	34.76	18.94	0.05
VIASAT INC	VSAT	17.02	4.2	17.64	6.83	0.24
ARRIS GROUP INC	ARRS	35.37	18.0	37.10	20.17	0.48
TYLER TECHNOLOG	TYL	4.35	5.8	41.79	7.70	0.14
MICROSEMI CORP	MSCC	4.98	5.8	47.04	11.10	0.12
MANHATTAN ASSOC	MANH	21.57	3.8	24.44	42.66	0.16
MKS INSTRUMENTS	MKSI	27.58	17.5	25.43	18.18	0.69
CACI INTL-A	CACI	10.63	10.7	22.33	5.83	0.48
ELEC FOR IMAGING	EFII	40.95	33.2	55.10	19.15	0.60

PROGRESS SOFTWAR	PRGS	11.05	14.2	52.42	10.27	0.27
CIRRUS LOGIC INC	CRUS	16.56	-16.4	63.71	25.99	-0.26
POWER INTEGRATIO	POWI	27.53	7.2	26.49	27.33	0.27
MICROSTRATEGY	MSTR	424.91	-13.6	7.72	113.71	-1.76
QUALITY SYSTEMS	QSII	0.93	1.5	49.70	8.71	0.03
NETSCOUT SYSTEMS	NTCT	19.80	5.4	24.08	15.94	0.22
DIODES INC	DIOD	3.59	3.8	26.35	8.39	0.14
FORRESTER RESEAR	FORR	35.26	5.7	19.26	33.27	0.30
KULICKE & SOFFA	KLIC	18.59	21.4	47.58	40.47	0.45
TRIQUINT SEMICON	TQNT	27.58	20.8	69.69	49.96	0.30
CABOT MICROELEC	CCMP	43.86	15.7	23.77	17.26	0.66
INSIGHT ENTERPRI	NSIT	23.11	19.9	39.39	14.16	0.50
SCANSOURCE INC	SCSC	8.60	5.1	22.21	10.73	0.23
CSG SYSTEMS INTL	CSGS	40.63	33.8	51.73	18.15	0.65
ATMI INC	ATMI	30.66	11.5	27.45	31.43	0.42
ADV ENERGY INDS	AEIS	39.25	13.6	28.49	50.93	0.48
HARMONIC INC	HLIT	44.92	24.0	35.54	79.80	0.67
DYCOM INDS	DY	36.24	30.3	38.74	13.84	0.78
BROOKS AUTOMATIO	BRKS	36.64	6.6	13.78	50.69	0.48
BLUCORA INC	BCOR	317.92	-8.1	24.00	498.01	-0.34
INTERMEC INC	IN	11.63	30.0	55.46	4.28	0.54
EXAR CORP	EXAR	24.25	2.9	31.85	85.52	0.09
EPIQ SYSTEMS INC	EPIQ	3.41	1.5	15.67	10.43	0.09
COMTECH TELECOMM	CMTL	5.55	2.0	12.74	10.84	0.16
RUDOLPH TECHNOL	RTEC	34.43	5.1	15.26	27.65	0.33
VASCO DATA INTL	VDSI	8.30	-0.2	25.23	912.44	-0.01
CIBER INC	CBR	17.25	20.2	57.31	11.93	0.35
NANOMETRICS INC	NANO	21.53	2.1	9.80	74.85	0.21
SUPERTEX INC	SUPX	23.33	4.0	12.27	18.56	0.32
MERCURY SYSTEMS	MRCY	24.96	8.4	20.92	15.92	0.40
VOXX INTERNATION	VOXX	19.90	10.9	20.11	11.83	0.54
AGILYSYS INC	AGYS	12.40	32.1	27.06	2.72	1.18
DIGI INTL INC	DGII	9.11	4.6	15.08	6.84	0.30
COHU INC	COHU	23.71	10.3	19.93	28.80	0.51
KOPIN CORP	KOPN	18.15	1.9	56.11	248.64	0.03
Average					**61.78**	**0.29**
Intrinsic Value						**$17.87**

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	18.65	146.3	624.90	19.93	0.23
MICROSOFT CORP	MSFT	40.94	2979.2	10309.96	37.09	0.29
IBM	IBM	109.15	4364.8	1791.01	11.89	2.44
ORACLE CORP	ORCL	22.95	793.1	5675.69	44.55	0.14
INTEL CORP	INTC	44.90	3608.6	6672.33	21.94	0.54
QUALCOMM INC	QCOM	33.57	208.0	1355.07	56.76	0.15
CISCO SYSTEMS	CSCO	46.48	1237.9	6778.56	70.04	0.18
EMC CORP/MA	EMC	52.26	538.6	2094.09	69.33	0.26
HEWLETT-PACKARD	HPQ	42.20	1263.2	2006.12	17.66	0.63
YAHOO! INC	YHOO	52.59	63.2	1034.79	379.67	0.06
DELL INC	DELL	41.04	687.7	2563.70	41.61	0.27
ADOBE SYS INC	ADBE	20.17	96.9	482.29	26.86	0.20
COGNIZANT TECH-A	CTSH	2.66	5.7	221.19	29.53	0.03
CORNING INC	GLW	47.60	347.1	784.55	28.91	0.44
INTUIT INC	INTU	20.42	49.4	390.59	44.04	0.13
BROADCOM CORP-A	BRCM	81.29	47.9	314.41	167.31	0.15
MOTOROLA SOLUTIO	MSI	120.58	1117.6	284.35	8.60	3.93
SYMANTEC CORP	SYMC	5.21	52.5	468.28	14.05	0.11
CERNER CORP	CERN	6.59	13.3	135.16	18.55	0.10
APPLIED MATERIAL	AMAT	27.87	576.0	1557.25	35.25	0.37
ANALOG DEVICES	ADI	46.93	155.6	347.18	32.30	0.45
SANDISK CORP	SNDK	24.08	17.4	120.69	66.52	0.14
CITRIX SYSTEMS	CTXS	36.29	47.0	179.96	34.38	0.26
NETAPP INC	NTAP	51.14	31.8	300.22	135.88	0.11
CA INC	CA	46.99	645.9	550.15	10.45	1.17
ALTERA CORP	ALTR	31.46	104.7	396.86	34.69	0.26
MICRON TECH	MU	43.11	469.6	541.93	34.29	0.87
XILINX INC	XLNX	49.92	98.8	317.78	50.72	0.31
KLA-TENCOR CORP	KLAC	43.60	61.0	181.57	48.69	0.34
JUNIPER NETWORKS	JNPR	102.93	30.7	313.53	1813.07	0.10
AUTODESK INC	ADSK	7.69	43.9	233.83	10.72	0.19
LINEAR TECH CORP	LLTC	43.31	94.7	310.02	39.27	0.31
NVIDIA CORP	NVDA	5.44	26.0	372.69	38.41	0.07
COMPUTER SCIENCE	CSC	71.63	308.5	164.50	10.25	1.88
VERISIGN INC	VRSN	104.92	4.6	126.07	3697.19	0.04
LAM RESEARCH	LRCX	24.87	37.1	120.11	32.29	0.31
MICROCHIP TECH	MCHP	19.07	52.4	175.54	18.96	0.30
BMC SOFTWARE INC	BMC	42.59	138.4	239.70	17.35	0.58

F5 NETWORKS	FFIV	31.57	0.6	41.32	46.70	0.01
HARRIS CORP	HRS	13.66	33.3	148.15	16.23	0.22
LSI CORP	LSI	33.37	158.5	299.31	17.84	0.53
JDS UNIPHASE	JDSU	506.48	90.6	84.33	143.68	1.07
PITNEY BOWES INC	PBI	48.48	358.0	262.62	9.15	1.36
TERADYNE INC	TER	49.58	120.5	171.38	27.46	0.70
ADV MICRO DEVICE	AMD	19.54	189.5	300.43	14.13	0.63
Average					**167.65**	**0.51**
Intrinsic Value						**$85.16**

*Stock Prices from January 1, 1999 - January 1, 2001

Exhibit 2 on pages 23-26 shows the average Pre Sox stock price valuation model, which contains the years January 1, 1999 to January 1, 2001 as the benchmark for this model analysis. The 45 companies average of large cap technology firms had comparable P/EBITDA ratios, but small cap firms tended to have negative and lower EBITDA per share relative to large cap tech firms.

Exhibit 3: Average Post SOX Stock Price Valuation

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	33.74	31.5	34.44	8.48	0.92
3D SYSTEMS CORP	DDD	5.28	-0.3	63.89	176.89	0.00
VIASAT INC	VSAT	26.90	16.9	30.18	12.44	0.56
ARRIS GROUP INC	ARRS	10.70	32.0	117.14	10.26	0.27
TYLER TECHNOLOG	TYL	13.90	9.2	40.66	15.26	0.23
MICROSEMI CORP	MSCC	22.89	20.2	76.91	22.74	0.26
MANHATTAN ASSOC	MANH	25.03	13.6	25.61	14.07	0.53
MKS INSTRUMENTS	MKSI	21.60	30.2	54.00	12.45	0.56
CACI INTL-A	CACI	47.03	50.2	30.23	8.75	1.66
ELEC FOR IMAGING	EFII	19.47	9.5	55.39	7.36	0.17
PROGRESS SOFTWAR	PRGS	19.22	23.5	61.85	26.04	0.38
CIRRUS LOGIC INC	CRUS	6.27	3.6	81.02	23.86	0.04
POWER INTEGRATIO	POWI	26.92	8.3	29.56	21.61	0.28
MICROSTRATEGY	MSTR	81.43	22.8	12.15	14.18	1.88
QUALITY SYSTEMS	QSII	18.08	16.6	54.90	38.53	0.30
NETSCOUT SYSTEMS	NTCT	10.13	3.7	34.72	31.60	0.11
DIODES INC	DIOD	23.87	22.7	42.41	10.32	0.54
FORRESTER RESEAR	FORR	27.31	8.1	23.08	15.95	0.35

KULICKE & SOFFA	KLIC	6.93	2.9	54.44	17.24	0.05
TRIQUINT SEMICON	TQNT	5.07	13.7	141.93	78.98	0.10
CABOT MICROELEC	CCMP	34.71	18.2	23.65	35.46	0.77
INSIGHT ENTERPRI	NSIT	17.15	39.3	48.03	10.89	0.82
SCANSOURCE INC	SCSC	28.64	22.8	26.04	63.56	0.88
CSG SYSTEMS INTL	CSGS	18.82	29.5	38.68	31.03	0.76
ATMI INC	ATMI	27.19	18.6	33.85	21.29	0.55
ADV ENERGY INDS	AEIS	15.77	13.7	43.96	9.24	0.31
HARMONIC INC	HLIT	8.91	10.0	86.97	13.70	0.12
DYCOM INDS	DY	20.59	32.1	40.45	11.48	0.79
BROOKS AUTOMATIO	BRKS	12.16	10.9	69.58	5.55	0.16
BLUCORA INC	BCOR	15.40	-7.3	33.39	8.39	-0.22
INTERMEC INC	IN	21.32	14.9	61.11	6.70	0.24
EXAR CORP	EXAR	10.08	-2.2	43.13	43.72	-0.05
EPIQ SYSTEMS INC	EPIQ	15.18	11.0	31.84	13.00	0.35
COMTECH TELECOMM	CMTL	44.75	32.0	23.90	11.39	1.34
RUDOLPH TECHNOL	RTEC	11.46	4.7	29.85	11.82	0.16
VASCO DATA INTL	VDSI	18.14	8.8	37.10	37.52	0.24
CIBER INC	CBR	6.69	18.6	61.61	6.60	0.30
NANOMETRICS INC	NANO	6.19	-0.8	18.46	20.98	-0.05
SUPERTEX INC	SUPX	29.77	5.7	13.38	61.60	0.42
MERCURY SYSTEMS	MRCY	10.21	0.2	21.62	29.03	0.01
VOXX INTERNATION	VOXX	10.84	0.8	22.04	6.42	0.03
AGILYSYS INC	AGYS	14.55	1.1	28.63	10.63	0.04
DIGI INTL INC	DGII	12.04	7.3	27.15	67.11	0.27
COHU INC	COHU	17.19	2.8	22.99	320.38	0.12
KOPIN CORP	KOPN	3.14	-0.7	69.06	9.91	-0.01
Average					**31.88**	**0.39**
Intrinsic Value						**$12.42**

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	135.35	1700.6	875.25	23.02	1.94
MICROSOFT CORP	MSFT	28.53	5808.0	9352.62	12.86	0.62
IBM	IBM	107.97	4856.5	1397.35	8.41	3.48
ORACLE CORP	ORCL	19.76	2242.1	5133.89	12.63	0.44
INTEL CORP	INTC	21.68	3494.8	5742.38	9.86	0.61
QUALCOMM INC	QCOM	42.00	933.6	1644.19	20.64	0.57

CISCO SYSTEMS	CSCO	25.51	2713.0	5997.35	14.95	0.45
EMC CORP/MA	EMC	15.76	682.9	2086.23	13.18	0.33
HEWLETT-PACKARD	HPQ	44.74	3211.2	2552.87	10.07	1.26
YAHOO! INC	YHOO	24.32	337.2	1346.42	23.83	0.25
DELL INC	DELL	22.44	1034.4	2125.48	12.75	0.49
ADOBE SYS INC	ADBE	38.63	303.5	568.16	20.63	0.53
COGNIZANT TECH-A	CTSH	33.36	119.0	289.00	24.76	0.41
CORNING INC	GLW	21.65	500.9	1568.79	18.99	0.32
INTUIT INC	INTU	28.58	220.2	331.58	12.01	0.66
BROADCOM CORP-A	BRCM	27.11	78.6	530.32	73.91	0.15
MOTOROLA SOLUTIO	MSI	53.45	133.0	327.36	25.21	0.41
SYMANTEC CORP	SYMC	18.02	409.1	865.89	10.73	0.47
CERNER CORP	CERN	24.80	92.6	159.80	11.50	0.58
APPLIED MATERIAL	AMAT	18.09	555.9	1367.45	10.39	0.41
ANALOG DEVICES	ADI	31.52	191.7	307.23	13.58	0.62
SANDISK CORP	SNDK	32.38	80.4	226.46	14.27	0.35
CITRIX SYSTEMS	CTXS	32.30	70.6	172.42	21.15	0.41
NETAPP INC	NTAP	26.14	106.6	391.21	23.43	0.27
CA INC	CA	23.66	314.2	514.80	11.59	0.61
ALTERA CORP	ALTR	20.52	93.2	326.80	20.42	0.29
MICRON TECH	MU	8.45	301.8	758.91	4.62	0.40
XILINX INC	XLNX	24.13	123.7	291.78	16.17	0.42
KLA-TENCOR CORP	KLAC	44.51	157.1	182.06	13.71	0.86
JUNIPER NETWORKS	JNPR	25.29	168.8	535.58	24.30	0.32
AUTODESK INC	ADSK	38.57	132.2	228.72	18.72	0.58
LINEAR TECH CORP	LLTC	31.60	149.3	241.94	13.94	0.62
NVIDIA CORP	NVDA	21.80	174.6	549.42	17.14	0.32
COMPUTER SCIENCE	CSC	47.90	607.8	164.25	3.52	3.70
VERISIGN INC	VRSN	30.54	74.6	220.33	26.33	0.34
LAM RESEARCH	LRCX	42.05	153.8	128.17	8.00	1.20
MICROCHIP TECH	MCHP	32.75	109.4	200.79	15.45	0.55
BMC SOFTWARE INC	BMC	31.86	131.6	201.33	13.06	0.65
F5 NETWORKS	FFIV	31.01	32.2	82.37	21.19	0.39
HARRIS CORP	HRS	48.49	225.5	133.33	7.77	1.69
LSI CORP	LSI	6.62	65.5	608.02	15.06	0.11
JDS UNIPHASE	JDSU	12.29	23.4	218.46	37.35	0.11
PITNEY BOWES INC	PBI	38.86	417.2	214.35	5.16	1.95
TERADYNE INC	TER	12.23	34.0	178.28	14.59	0.19
ADV MICRO DEVICE	AMD	9.42	103.4	579.32	17.08	0.18
Average					**17.07**	**0.70**
Intrinsic Value						**$101.94**

*Stock Prices from January 1, 2007 - January 1, 2009

Also, although Exhibit 3 on pages 26-28 is useful, it does not paint the whole picture on how comparatively the different size technology firms did after compliance with Section 404 of Sarbanes-Oxley. Small cap tech company's intrinsic value decreased from $17.87 in the Pre SOX era to $12.42 in the Post SOX era. Comparatively, large cap tech company's intrinsic value increased from $85.16 in the Pre SOX era to $101.94 in the Post SOX era. Exhibit 4 on pages 28-31 shows the percentage change in both small cap and large cap tech corporations from the Pre to Post Sarbanes-Oxley eras.

Exhibit 4: Comparable Company Model Percent Change from Pre to Post SOX Period

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	-3.22%	135.15%	21.47%	-78.46%	93.59%
3D SYSTEMS CORP	DDD	58.22%	-116.81%	83.82%	834.17%	-109.14%
VIASAT INC	VSAT	58.04%	302.35%	71.13%	82.05%	135.12%
ARRIS GROUP INC	ARRS	-69.75%	78.11%	215.77%	-49.11%	-43.59%
TYLER TECHNOLOG	TYL	219.63%	58.69%	-2.70%	98.19%	63.09%
MICROSEMI CORP	MSCC	359.95%	252.07%	63.51%	104.88%	115.32%
MANHATTAN ASSOC	MANH	16.08%	254.14%	4.81%	-67.02%	237.88%
MKS INSTRUMENTS	MKSI	-21.70%	72.98%	112.37%	-31.52%	-18.55%
CACI INTL-A	CACI	342.34%	368.49%	35.40%	50.07%	246.00%
ELEC FOR IMAGING	EFII	-52.45%	-71.39%	0.51%	-61.56%	-71.53%
PROGRESS SOFTWAR	PRGS	73.93%	65.99%	17.98%	153.68%	40.69%
CIRRUS LOGIC INC	CRUS	-62.14%	-122.18%	27.18%	-8.17%	-117.44%
POWER INTEGRATIO	POWI	-2.23%	14.11%	11.59%	-20.92%	2.26%
MICROSTRATEGY	MSTR	-80.84%	-267.88%	57.53%	-87.53%	-206.57%
QUALITY SYSTEMS	QSII	1839.66%	1001.81%	10.46%	342.20%	897.44%
NETSCOUT SYSTEMS	NTCT	-48.84%	-30.91%	44.18%	98.27%	-52.08%
DIODES INC	DIOD	564.75%	504.52%	60.93%	22.98%	275.64%
FORRESTER RESEAR	FORR	-22.54%	43.02%	19.80%	-52.05%	19.39%
KULICKE & SOFFA	KLIC	-62.71%	-86.25%	14.43%	-57.40%	-87.99%
TRIQUINT SEMICON	TQNT	-81.63%	-33.92%	103.66%	58.09%	-67.55%
CABOT MICROELEC	CCMP	-20.87%	15.65%	-0.54%	105.45%	16.28%
INSIGHT ENTERPRI	NSIT	-25.80%	97.71%	21.94%	-23.08%	62.13%

SCANSOURCE INC	SCSC	233.06%	349.77%	17.26%	492.13%	283.55%
CSG SYSTEMS INTL	CSGS	-53.68%	-12.81%	-25.23%	71.00%	16.61%
ATMI INC	ATMI	-11.34%	62.28%	23.29%	-32.25%	31.63%
ADV ENERGY INDS	AEIS	-59.82%	1.10%	54.29%	-81.86%	-34.48%
HARMONIC INC	HLIT	-80.17%	-58.22%	144.69%	-82.84%	-82.93%
DYCOM INDS	DY	-43.19%	5.89%	4.41%	-17.05%	1.41%
BROOKS AUTOMATIO	BRKS	-66.81%	65.40%	405.09%	-89.05%	-67.25%
BLUCORA INC	BCOR	-95.16%	-8.87%	39.13%	-98.31%	-34.50%
INTERMEC INC	IN	83.28%	-50.19%	10.18%	56.51%	-54.80%
EXAR CORP	EXAR	-58.46%	-175.46%	35.42%	-48.87%	-155.72%
EPIQ SYSTEMS INC	EPIQ	344.81%	654.74%	103.15%	24.69%	271.52%
COMTECH TELECOMM	CMTL	706.77%	1502.67%	87.62%	5.11%	754.19%
RUDOLPH TECHNOL	RTEC	-66.71%	-7.97%	95.52%	-57.27%	-52.93%
VASCO DATA INTL	VDSI	118.45%	-4535.76%	47.06%	-95.89%	-3116.31%
CIBER INC	CBR	-61.22%	-7.80%	7.50%	-44.65%	-14.23%
NANOMETRICS INC	NANO	-71.26%	-140.80%	88.32%	-71.97%	-121.66%
SUPERTEX INC	SUPX	27.56%	42.73%	9.04%	231.89%	30.90%
MERCURY SYSTEMS	MRCY	-59.11%	-97.55%	3.38%	82.40%	-97.63%
VOXX INTERNATION	VOXX	-45.52%	-92.93%	9.60%	-45.73%	-93.55%
AGILYSYS INC	AGYS	17.30%	-96.47%	5.81%	290.36%	-96.66%
DIGI INTL INC	DGII	32.12%	60.04%	80.02%	881.37%	-11.10%
COHU INC	COHU	-27.48%	-73.02%	15.34%	1012.33%	-76.61%
KOPIN CORP	KOPN	-82.67%	-134.78%	23.09%	-96.02%	-128.25%
Average						**34.80%**
Intrinsic Value						**-30.45%**

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	625.79%	1062.02%	40.06%	15.53%	729.65%
MICROSOFT CORP	MSFT	-30.30%	94.95%	-9.29%	-65.33%	114.91%
IBM	IBM	-1.08%	11.26%	-21.98%	-29.27%	42.61%
ORACLE CORP	ORCL	-13.90%	182.68%	-9.55%	-71.65%	212.52%
INTEL CORP	INTC	-51.70%	-3.16%	-13.94%	-55.05%	12.53%
QUALCOMM INC	QCOM	25.12%	348.88%	21.34%	-63.64%	269.94%
CISCO SYSTEMS	CSCO	-45.13%	119.16%	-11.52%	-78.66%	147.71%
EMC CORP/MA	EMC	-69.84%	26.79%	-0.38%	-80.99%	27.27%
HEWLETT-PACKARD	HPQ	6.00%	154.22%	27.25%	-42.99%	99.77%
YAHOO! INC	YHOO	-53.76%	433.87%	30.12%	-93.72%	310.31%

DELL INC	DELL	-45.31%	50.42%	-17.09%	-69.36%	81.44%
ADOBE SYS INC	ADBE	91.49%	213.19%	17.81%	-23.22%	165.86%
COGNIZANT TECH-A	CTSH	1152.18%	1983.24%	30.66%	-16.14%	1494.43%
CORNING INC	GLW	-54.51%	44.31%	99.96%	-34.33%	-27.83%
INTUIT INC	INTU	39.95%	345.37%	-15.11%	-72.73%	424.64%
BROADCOM CORP-A	BRCM	-66.65%	64.24%	68.67%	-55.83%	-2.63%
MOTOROLA SOLUTIO	MSI	-55.67%	-88.10%	15.13%	193.02%	-89.66%
SYMANTEC CORP	SYMC	245.93%	678.79%	84.91%	-23.58%	321.17%
CERNER CORP	CERN	276.36%	594.64%	18.24%	-38.00%	487.50%
APPLIED MATERIAL	AMAT	-35.08%	-3.49%	-12.19%	-70.54%	9.90%
ANALOG DEVICES	ADI	-32.85%	23.19%	-11.51%	-57.95%	39.21%
SANDISK CORP	SNDK	34.48%	362.37%	87.63%	-78.54%	146.43%
CITRIX SYSTEMS	CTXS	-10.97%	50.15%	-4.19%	-38.50%	56.72%
NETAPP INC	NTAP	-48.88%	235.04%	30.31%	-82.76%	157.12%
CA INC	CA	-49.65%	-51.36%	-6.43%	10.84%	-48.02%
ALTERA CORP	ALTR	-34.77%	-10.98%	-17.66%	-41.12%	8.11%
MICRON TECH	MU	-80.39%	-35.73%	40.04%	-86.53%	-54.11%
XILINX INC	XLNX	-51.66%	25.27%	-8.18%	-68.12%	36.43%
KLA-TENCOR CORP	KLAC	2.10%	157.57%	0.27%	-71.85%	156.87%
JUNIPER NETWORKS	JNPR	-75.43%	450.78%	70.82%	-98.66%	222.43%
AUTODESK INC	ADSK	401.68%	201.23%	-2.19%	74.72%	207.96%
LINEAR TECH CORP	LLTC	-27.04%	57.69%	-21.96%	-64.49%	102.07%
NVIDIA CORP	NVDA	300.47%	572.89%	47.42%	-55.38%	356.45%
COMPUTER SCIENCE	CSC	-33.13%	97.01%	-0.15%	-65.64%	97.31%
VERISIGN INC	VRSN	-70.89%	1517.89%	74.76%	-99.29%	825.76%
LAM RESEARCH	LRCX	69.06%	314.91%	6.71%	-75.22%	288.83%
MICROCHIP TECH	MCHP	71.73%	108.71%	14.38%	-18.52%	82.46%
BMC SOFTWARE INC	BMC	-25.19%	-4.92%	-16.01%	-24.73%	13.20%
F5 NETWORKS	FFIV	-1.80%	5395.45%	99.34%	-54.62%	2656.80%
HARRIS CORP	HRS	255.08%	577.57%	-10.01%	-52.15%	652.91%
LSI CORP	LSI	-80.15%	-58.66%	103.14%	-15.58%	-79.65%
JDS UNIPHASE	JDSU	-97.57%	-74.17%	159.05%	-74.00%	-90.03%
PITNEY BOWES INC	PBI	-19.85%	16.54%	-18.38%	-43.56%	42.79%
TERADYNE INC	TER	-75.33%	-71.77%	4.02%	-46.86%	-72.86%
ADV MICRO DEVICE	AMD	-51.81%	-45.42%	92.83%	20.85%	-71.69%
Average					**-89.82%**	**37.76%**
Intrinsic Value						**19.70%**

*Stock Prices from January 1, 2007 - January 1, 2009

Exhibit 4 on pages 28-31 shows the total percentage change in intrinsic value of small cap and large cap companies from the Pre SOX compliance time period, also referred to as this study's benchmark. Referring back to table 1 on page 6, the market capitalization cutoff for small public firms is less than $781.1 million. Large public firms are greater than $781.1 million in market capitalization. The results from the comparable company analysis model shows that large cap technology firms had a greater percentage increase of 19.70% in its average intrinsic value compared to small cap tech companies, which had a decrease of 30.45% in its intrinsic value . This correlates to my testable hypothesis in that costs and time allocated for specifically for SOX had more of an adverse effect on small cap technology firms in relation to large cap tech companies.

My testable hypothesis was showing that Section 404 of the Sarbanes-Oxley Act's compliance costs affected smaller technology company's stock prices compared to their larger counterpart in the same industry. As stated before the intentions behind Sarbanes-Oxley were to improve investor's concerns by improving transparency and the accuracy of financial reports. Many of the provisions of Sarbanes-Oxley increase accounting, audit, and other general compliance costs. Smaller firms have few resources, thus enjoy lesser economies of scale and deal with smaller investments or projects. Because of this, smaller public firms are likely to face higher costs and actually receive lower benefits from SOX, which was supposed to help out businesses alike. This comparable company analysis model reaffirms my hypothesis that the increased compliance costs of Section 404 of the Sarbanes-Oxley Act had an ill effect on smaller public technology companies. This analysis shows how the good intentions of a piece of legislation can have an adverse effect on the market and businesses alike. Section 404 of SOX

ended up hurting specifically smaller public Technology companies due to the increase in costs to comply with the new law comparatively to their larger counterpart.

Section V: Robustness Analysis

The purpose of this section is to describe the comparable company model's ability to effectively perform while its variable or assumptions are altered. With that being said, robust means a model can handle variability and remain effectively the same. In this robustness test, I took 10 companies in both the large cap and small cap out of the comparable company model to see what effects it would have on the overall percentage change in the average intrinsic value. Since I used a sample size of 45 companies, taking 10 out (thus leaving 35) is still a population that is considered significant to create a normal distribution. This test should indicate whether or not my model essentially is reliable or robust when changing some assumptions.

To see the effects of adding one more company to each size segment, I rewrote my model and got the results in Exhibit 5 on pages 33-35 below:

Exhibit 5: Average Pre SOX Stock Price Valuation

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	34.86	13.4	28.36	39.39	0.47
3D SYSTEMS CORP	DDD	3.34	1.6	34.76	18.94	0.05
VIASAT INC	VSAT	17.02	4.2	17.64	6.83	0.24
ARRIS GROUP INC	ARRS	35.37	18.0	37.10	20.17	0.48
TYLER TECHNOLOG	TYL	4.35	5.8	41.79	7.70	0.14
MICROSEMI CORP	MSCC	4.98	5.8	47.04	11.10	0.12
MANHATTAN ASSOC	MANH	21.57	3.8	24.44	42.66	0.16
MKS INSTRUMENTS	MKSI	27.58	17.5	25.43	18.18	0.69
CACI INTL-A	CACI	10.63	10.7	22.33	5.83	0.48
ELEC FOR IMAGING	EFII	40.95	33.2	55.10	19.15	0.60
PROGRESS SOFTWAR	PRGS	11.05	14.2	52.42	10.27	0.27
CIRRUS LOGIC INC	CRUS	16.56	-16.4	63.71	25.99	-0.26
POWER INTEGRATIO	POWI	27.53	7.2	26.49	27.33	0.27

MICROSTRATEGY	MSTR	424.91	-13.6	7.72	113.71	-1.76
QUALITY SYSTEMS	QSII	0.93	1.5	49.70	8.71	0.03
NETSCOUT SYSTEMS	NTCT	19.80	5.4	24.08	15.94	0.22
DIODES INC	DIOD	3.59	3.8	26.35	8.39	0.14
FORRESTER RESEAR	FORR	35.26	5.7	19.26	33.27	0.30
KULICKE & SOFFA	KLIC	18.59	21.4	47.58	40.47	0.45
TRIQUINT SEMICON	TQNT	27.58	20.8	69.69	49.96	0.30
CABOT MICROELEC	CCMP	43.86	15.7	23.77	17.26	0.66
INSIGHT ENTERPRI	NSIT	23.11	19.9	39.39	14.16	0.50
SCANSOURCE INC	SCSC	8.60	5.1	22.21	10.73	0.23
CSG SYSTEMS INTL	CSGS	40.63	33.8	51.73	18.15	0.65
ATMI INC	ATMI	30.66	11.5	27.45	31.43	0.42
ADV ENERGY INDS	AEIS	39.25	13.6	28.49	50.93	0.48
HARMONIC INC	HLIT	44.92	24.0	35.54	79.80	0.67
DYCOM INDS	DY	36.24	30.3	38.74	13.84	0.78
BROOKS AUTOMATIO	BRKS	36.64	6.6	13.78	50.69	0.48
BLUCORA INC	BCOR	317.92	-8.1	24.00	498.01	-0.34
INTERMEC INC	IN	11.63	30.0	55.46	4.28	0.54
EXAR CORP	EXAR	24.25	2.9	31.85	85.52	0.09
EPIQ SYSTEMS INC	EPIQ	3.41	1.5	15.67	10.43	0.09
COMTECH TELECOMM	CMTL	5.55	2.0	12.74	10.84	0.16
RUDOLPH TECHNOL	RTEC	34.43	5.1	15.26	27.65	0.33
Average					**41.36**	**0.26**
Intrinsic Value						**$10.82**

*Stock Prices from January 1, 1999 - January 1, 2001

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	18.65	146.3	624.90	19.93	0.23
MICROSOFT CORP	MSFT	40.94	2979.2	10309.96	37.09	0.29
IBM	IBM	109.15	4364.8	1791.01	11.89	2.44
ORACLE CORP	ORCL	22.95	793.1	5675.69	44.55	0.14
INTEL CORP	INTC	44.90	3608.6	6672.33	21.94	0.54
QUALCOMM INC	QCOM	33.57	208.0	1355.07	56.76	0.15
CISCO SYSTEMS	CSCO	46.48	1237.9	6778.56	70.04	0.18
EMC CORP/MA	EMC	52.26	538.6	2094.09	69.33	0.26
HEWLETT-PACKARD	HPQ	42.20	1263.2	2006.12	17.66	0.63
YAHOO! INC	YHOO	52.59	63.2	1034.79	379.67	0.06
DELL INC	DELL	41.04	687.7	2563.70	41.61	0.27

ADOBE SYS INC	ADBE	20.17	96.9	482.29	26.86	0.20
COGNIZANT TECH-A	CTSH	2.66	5.7	221.19	29.53	0.03
CORNING INC	GLW	47.60	347.1	784.55	28.91	0.44
INTUIT INC	INTU	20.42	49.4	390.59	44.04	0.13
BROADCOM CORP-A	BRCM	81.29	47.9	314.41	167.31	0.15
MOTOROLA SOLUTIO	MSI	120.58	1117.6	284.35	8.60	3.93
SYMANTEC CORP	SYMC	5.21	52.5	468.28	14.05	0.11
CERNER CORP	CERN	6.59	13.3	135.16	18.55	0.10
APPLIED MATERIAL	AMAT	27.87	576.0	1557.25	35.25	0.37
ANALOG DEVICES	ADI	46.93	155.6	347.18	32.30	0.45
SANDISK CORP	SNDK	24.08	17.4	120.69	66.52	0.14
CITRIX SYSTEMS	CTXS	36.29	47.0	179.96	34.38	0.26
NETAPP INC	NTAP	51.14	31.8	300.22	135.88	0.11
CA INC	CA	46.99	645.9	550.15	10.45	1.17
ALTERA CORP	ALTR	31.46	104.7	396.86	34.69	0.26
MICRON TECH	MU	43.11	469.6	541.93	34.29	0.87
XILINX INC	XLNX	49.92	98.8	317.78	50.72	0.31
KLA-TENCOR CORP	KLAC	43.60	61.0	181.57	48.69	0.34
JUNIPER NETWORKS	JNPR	102.93	30.7	313.53	1813.07	0.10
AUTODESK INC	ADSK	7.69	43.9	233.83	10.72	0.19
LINEAR TECH CORP	LLTC	43.31	94.7	310.02	39.27	0.31
NVIDIA CORP	NVDA	5.44	26.0	372.69	38.41	0.07
COMPUTER SCIENCE	CSC	71.63	308.5	164.50	10.25	1.88
VERISIGN INC	VRSN	104.92	4.6	126.07	3697.19	0.04
Average					**205.73**	**0.49**
Intrinsic Value						**$100.72**

*Stock Prices from January 1, 1999 - January 1, 2001

Exhibit 5 on pages 33-35 shows a slightly similar story in the Pre SOX era. Referring back to Exhibit 1 on pages 11-13, the deviation between large cap firms are within fifteen dollars of each other. As for small cap tech firms, the deviation is within seven dollars of each. This shows a similar correlation, with a small deviation from the benchmark year (1999-2001). So for this part of the robustness test, taking out 10 companies has kept the valuations similar.

Taking a look at Exhibit 6 on pages 36-38 tells a similar story for the Post SOX era. The deviation is a lot larger overall for the large cap technology firms which went from $100.72 in Pre SOX era to $156.12 in the Post SOX Era. The deviation for small cap firms in Exhibit 6, on

pages 36-38, decreased from $10.82 in Pre SOX era to $8.89 in the Post SOX. Although this is obviously a larger deviation for large cap tech firms, I still however firmly believe that smaller technology firms were affected in a greater comparison to larger companies in the same sector. This is still shown with the decrease in the intrinsic values of small cap tech firms and an increase in large cap tech firms.

Exhibit 6: Average Post SOX Stock Price Valuation

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	33.74	31.5	34.44	8.48	0.92
3D SYSTEMS CORP	DDD	5.28	-0.3	63.89	176.89	0.00
VIASAT INC	VSAT	26.90	16.9	30.18	12.44	0.56
ARRIS GROUP INC	ARRS	10.70	32.0	117.14	10.26	0.27
TYLER TECHNOLOG	TYL	13.90	9.2	40.66	15.26	0.23
MICROSEMI CORP	MSCC	22.89	20.2	76.91	22.74	0.26
MANHATTAN ASSOC	MANH	25.03	13.6	25.61	14.07	0.53
MKS INSTRUMENTS	MKSI	21.60	30.2	54.00	12.45	0.56
CACI INTL-A	CACI	47.03	50.2	30.23	8.75	1.66
ELEC FOR IMAGING	EFII	19.47	9.5	55.39	7.36	0.17
PROGRESS SOFTWAR	PRGS	19.22	23.5	61.85	26.04	0.38
CIRRUS LOGIC INC	CRUS	6.27	3.6	81.02	23.86	0.04
POWER INTEGRATIO	POWI	26.92	8.3	29.56	21.61	0.28
MICROSTRATEGY	MSTR	81.43	22.8	12.15	14.18	1.88
QUALITY SYSTEMS	QSII	18.08	16.6	54.90	38.53	0.30
NETSCOUT SYSTEMS	NTCT	10.13	3.7	34.72	31.60	0.11
DIODES INC	DIOD	23.87	22.7	42.41	10.32	0.54
FORRESTER RESEAR	FORR	27.31	8.1	23.08	15.95	0.35
KULICKE & SOFFA	KLIC	6.93	2.9	54.44	17.24	0.05
TRIQUINT SEMICON	TQNT	5.07	13.7	141.93	78.98	0.10
CABOT MICROELEC	CCMP	34.71	18.2	23.65	35.46	0.77
INSIGHT ENTERPRI	NSIT	17.15	39.3	48.03	10.89	0.82
SCANSOURCE INC	SCSC	28.64	22.8	26.04	63.56	0.88
CSG SYSTEMS INTL	CSGS	18.82	29.5	38.68	31.03	0.76
ATMI INC	ATMI	27.19	18.6	33.85	21.29	0.55
ADV ENERGY INDS	AEIS	15.77	13.7	43.96	9.24	0.31
HARMONIC INC	HLIT	8.91	10.0	86.97	13.70	0.12
DYCOM INDS	DY	20.59	32.1	40.45	11.48	0.79

BROOKS AUTOMATIO	BRKS	12.16	10.9	69.58	5.55	0.16
BLUCORA INC	BCOR	15.40	-7.3	33.39	8.39	-0.22
INTERMEC INC	IN	21.32	14.9	61.11	6.70	0.24
EXAR CORP	EXAR	10.08	-2.2	43.13	43.72	-0.05
EPIQ SYSTEMS INC	EPIQ	15.18	11.0	31.84	13.00	0.35
COMTECH TELECOMM	CMTL	44.75	32.0	23.90	11.39	1.34
RUDOLPH TECHNOL	RTEC	11.46	4.7	29.85	11.82	0.16
Average					**24.69**	**0.36**
Intrinsic Value						**$8.89**

*Stock Prices from January 1, 2007 - January 1, 2009

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	135.35	1700.6	875.25	23.02	1.94
MICROSOFT CORP	MSFT	28.53	5808.0	9352.62	12.86	0.62
IBM	IBM	107.97	4856.5	1397.35	8.41	3.48
ORACLE CORP	ORCL	19.76	2242.1	5133.89	12.63	0.44
INTEL CORP	INTC	21.68	3494.8	5742.38	9.86	0.61
QUALCOMM INC	QCOM	42.00	933.6	1644.19	20.64	0.57
CISCO SYSTEMS	CSCO	25.51	2713.0	5997.35	14.95	0.45
EMC CORP/MA	EMC	15.76	682.9	2086.23	13.18	0.33
HEWLETT-PACKARD	HPQ	44.74	3211.2	2552.87	10.07	1.26
YAHOO! INC	YHOO	24.32	337.2	1346.42	223.83	0.25
DELL INC	DELL	22.44	1034.4	2125.48	12.75	0.49
ADOBE SYS INC	ADBE	38.63	303.5	568.16	20.63	0.53
COGNIZANT TECH-A	CTSH	33.36	119.0	289.00	24.76	0.41
CORNING INC	GLW	21.65	500.9	1568.79	18.99	0.32
INTUIT INC	INTU	28.58	220.2	331.58	12.01	0.66
BROADCOM CORP-A	BRCM	27.11	78.6	530.32	73.91	0.15
MOTOROLA SOLUTIO	MSI	53.45	133.0	327.36	25.21	0.41
SYMANTEC CORP	SYMC	18.02	409.1	865.89	10.73	0.47
CERNER CORP	CERN	24.80	92.6	159.80	11.50	0.58
APPLIED MATERIAL	AMAT	18.09	555.9	1367.45	10.39	0.41
ANALOG DEVICES	ADI	31.52	191.7	307.23	13.58	0.62
SANDISK CORP	SNDK	32.38	80.4	226.46	14.27	0.35
CITRIX SYSTEMS	CTXS	32.30	70.6	172.42	21.15	0.41
NETAPP INC	NTAP	26.14	106.6	391.21	23.43	0.27
CA INC	CA	23.66	314.2	514.80	11.59	0.61
ALTERA CORP	ALTR	20.52	93.2	326.80	20.42	0.29

MICRON TECH	MU	8.45	301.8	758.91	4.62	0.40
XILINX INC	XLNX	24.13	123.7	291.78	16.17	0.42
KLA-TENCOR CORP	KLAC	44.51	157.1	182.06	13.71	0.86
JUNIPER NETWORKS	JNPR	25.29	168.8	535.58	24.30	0.32
AUTODESK INC	ADSK	38.57	132.2	228.72	18.72	0.58
LINEAR TECH CORP	LLTC	31.60	149.3	241.94	13.94	0.62
NVIDIA CORP	NVDA	21.80	174.6	549.42	17.14	0.32
COMPUTER SCIENCE	CSC	47.90	607.8	164.25	3.52	3.70
VERISIGN INC	VRSN	30.54	74.6	220.33	26.33	0.34
Average					**223.23**	**0.70**
Intrinsic Value						**$156.12**

*Stock Prices from January 1, 2007 - January 1, 2009

Exhibit 7 on pages 38-40 shows the percentage change of comparable company model that took out 10 companies in both the large and small cap technology sector. Referring to the results of large cap tech firms, the change from the Pre to Post Sarbanes-Oxley periods was within a 55.01% increase of each other with 10 larger tech firm taken away to the original comparable company model, which had a 19.70% increase. The results are very similar in small public technology firm's intrinsic value percentage change from the Pre to Post SOX time frame. Referring to Exhibit 7 on pages 38-40, the intrinsic value percentage change decrease 17.84% in the robustness analysis from a 30.45% decrease in the original model. This would suggest that the valuation model may be statistically significant, with the outcome still the same; however, the rate of change does differ for the large cap segment.

Exhibit 7: Comparable Company Model Percent Change from Pre to Post SOX Period

Small Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
CYMER INC	CYMI	-3.22%	135.15%	21.47%	-78.46%	93.59%
3D SYSTEMS CORP	DDD	58.22%	-116.81%	83.82%	834.17%	-109.14%
VIASAT INC	VSAT	58.04%	302.35%	71.13%	82.05%	135.12%
ARRIS GROUP INC	ARRS	-69.75%	78.11%	215.77%	-49.11%	-43.59%
TYLER TECHNOLOG	TYL	219.63%	58.69%	-2.70%	98.19%	63.09%

MICROSEMI CORP	MSCC	359.95%	252.07%	63.51%	104.88%	115.32%
MANHATTAN ASSOC	MANH	16.08%	254.14%	4.81%	-67.02%	237.88%
MKS INSTRUMENTS	MKSI	-21.70%	72.98%	112.37%	-31.52%	-18.55%
CACI INTL-A	CACI	342.34%	368.49%	35.40%	50.07%	246.00%
ELEC FOR IMAGING	EFII	-52.45%	-71.39%	0.51%	-61.56%	-71.53%
PROGRESS SOFTWAR	PRGS	73.93%	65.99%	17.98%	153.68%	40.69%
CIRRUS LOGIC INC	CRUS	-62.14%	-122.18%	27.18%	-8.17%	-117.44%
POWER INTEGRATIO	POWI	-2.23%	14.11%	11.59%	-20.92%	2.26%
MICROSTRATEGY	MSTR	-80.84%	-267.88%	57.53%	-87.53%	-206.57%
QUALITY SYSTEMS	QSII	1839.66%	1001.81%	10.46%	342.20%	897.44%
NETSCOUT SYSTEMS	NTCT	-48.84%	-30.91%	44.18%	98.27%	-52.08%
DIODES INC	DIOD	564.75%	504.52%	60.93%	22.98%	275.64%
FORRESTER RESEAR	FORR	-22.54%	43.02%	19.80%	-52.05%	19.39%
KULICKE & SOFFA	KLIC	-62.71%	-86.25%	14.43%	-57.40%	-87.99%
TRIQUINT SEMICON	TQNT	-81.63%	-33.92%	103.66%	58.09%	-67.55%
CABOT MICROELEC	CCMP	-20.87%	15.65%	-0.54%	105.45%	16.28%
INSIGHT ENTERPRI	NSIT	-25.80%	97.71%	21.94%	-23.08%	62.13%
SCANSOURCE INC	SCSC	233.06%	349.77%	17.26%	492.13%	283.55%
CSG SYSTEMS INTL	CSGS	-53.68%	-12.81%	-25.23%	71.00%	16.61%
ATMI INC	ATMI	-11.34%	62.28%	23.29%	-32.25%	31.63%
ADV ENERGY INDS	AEIS	-59.82%	1.10%	54.29%	-81.86%	-34.48%
HARMONIC INC	HLIT	-80.17%	-58.22%	144.69%	-82.84%	-82.93%
DYCOM INDS	DY	-43.19%	5.89%	4.41%	-17.05%	1.41%
BROOKS AUTOMATIO	BRKS	-66.81%	65.40%	405.09%	-89.05%	-67.25%
BLUCORA INC	BCOR	-95.16%	-8.87%	39.13%	-98.31%	-34.50%
INTERMEC INC	IN	83.28%	-50.19%	10.18%	56.51%	-54.80%
EXAR CORP	EXAR	-58.46%	-175.46%	35.42%	-48.87%	-155.72%
EPIQ SYSTEMS INC	EPIQ	344.81%	654.74%	103.15%	24.69%	271.52%
COMTECH TELECOMM	CMTL	706.77%	1502.67%	87.62%	5.11%	754.19%
RUDOLPH TECHNOL	RTEC	-66.71%	-7.97%	95.52%	-57.27%	-52.93%
Average					**-40.30%**	**37.62%**
Intrinsic Value						**-17.84%**

Large Cap Company	Ticker	Stock Price	EBITDA	Shares Outstanding	Price/EBITDA	EBITDA Per Share
APPLE INC	AAPL	625.79%	1062.02%	40.06%	15.53%	729.65%
MICROSOFT CORP	MSFT	-30.30%	94.95%	-9.29%	-65.33%	114.91%
IBM	IBM	-1.08%	11.26%	-21.98%	-29.27%	42.61%

ORACLE CORP	ORCL	-13.90%	182.68%	-9.55%	-71.65%	212.52%
INTEL CORP	INTC	-51.70%	-3.16%	-13.94%	-55.05%	12.53%
QUALCOMM INC	QCOM	25.12%	348.88%	21.34%	-63.64%	269.94%
CISCO SYSTEMS	CSCO	-45.13%	119.16%	-11.52%	-78.66%	147.71%
EMC CORP/MA	EMC	-69.84%	26.79%	-0.38%	-80.99%	27.27%
HEWLETT-PACKARD	HPQ	6.00%	154.22%	27.25%	-42.99%	99.77%
YAHOO! INC	YHOO	-53.76%	433.87%	30.12%	-41.05%	310.31%
DELL INC	DELL	-45.31%	50.42%	-17.09%	-69.36%	81.44%
ADOBE SYS INC	ADBE	91.49%	213.19%	17.81%	-23.22%	165.86%
COGNIZANT TECH-A	CTSH	1152.18%	1983.24%	30.66%	-16.14%	1494.43%
CORNING INC	GLW	-54.51%	44.31%	99.96%	-34.33%	-27.83%
INTUIT INC	INTU	39.95%	345.37%	-15.11%	-72.73%	424.64%
BROADCOM CORP-A	BRCM	-66.65%	64.24%	68.67%	-55.83%	-2.63%
MOTOROLA SOLUTIO	MSI	-55.67%	-88.10%	15.13%	193.02%	-89.66%
SYMANTEC CORP	SYMC	245.93%	678.79%	84.91%	-23.58%	321.17%
CERNER CORP	CERN	276.36%	594.64%	18.24%	-38.00%	487.50%
APPLIED MATERIAL	AMAT	-35.08%	-3.49%	-12.19%	-70.54%	9.90%
ANALOG DEVICES	ADI	-32.85%	23.19%	-11.51%	-57.95%	39.21%
SANDISK CORP	SNDK	34.48%	362.37%	87.63%	-78.54%	146.43%
CITRIX SYSTEMS	CTXS	-10.97%	50.15%	-4.19%	-38.50%	56.72%
NETAPP INC	NTAP	-48.88%	235.04%	30.31%	-82.76%	157.12%
CA INC	CA	-49.65%	-51.36%	-6.43%	10.84%	-48.02%
ALTERA CORP	ALTR	-34.77%	-10.98%	-17.66%	-41.12%	8.11%
MICRON TECH	MU	-80.39%	-35.73%	40.04%	-86.53%	-54.11%
XILINX INC	XLNX	-51.66%	25.27%	-8.18%	-68.12%	36.43%
KLA-TENCOR CORP	KLAC	2.10%	157.57%	0.27%	-71.85%	156.87%
JUNIPER NETWORKS	JNPR	-75.43%	450.78%	70.82%	-98.66%	222.43%
AUTODESK INC	ADSK	401.68%	201.23%	-2.19%	74.72%	207.96%
LINEAR TECH CORP	LLTC	-27.04%	57.69%	-21.96%	-64.49%	102.07%
NVIDIA CORP	NVDA	300.47%	572.89%	47.42%	-55.38%	356.45%
COMPUTER SCIENCE	CSC	-33.13%	97.01%	-0.15%	-65.64%	97.31%
VERISIGN INC	VRSN	-70.89%	1517.89%	74.76%	-99.29%	825.76%
Average					**8.51%**	**42.85%**
Intrinsic Value						**55.01%**

*Stock Prices from the Pre SOX dates of January 1, 1999-2002 and Post SOX dates of January 1, 2007-2009

Other possible conclusions to this argument are adding a more or less to the sample size will yield similar results, but possibly different rate of changes due to the market cap of the

companies. Companies for both large and the small segments to increase the statistical significance of the comparable company model used to find the intrinsic value of the Pre and Post SOX periods. Also one could also analyze a longer period of time for both pre and post SOX eras, which might yield different results. One might also reconsider some multiples that may be more relevant to the tech industry to compare small cap to large cap, such as Enterprise Value/EBITDA. There are many different valuation techniques, which could yield different or similar results that are not touched on in this paper. Also, other factors besides compliance with SOX can also affect stock prices at a later given point in time. Such things as earnings releases and news drives share price, which could dilute the analytical evaluation of SOX's compliance on my model. With more available data, I want to achieve a statistically significant result regardless of whether if the results support my testable hypothesis or not. I still; however, firmly believe that Section 404's compliance costs had a great adverse effect on small cap public technology company's stock prices.

Section VI: Conclusion

The purpose of this paper was to analyze and interpret the effects of compliance with Section 404 of the Sarbanes-Oxley Act on small public technology firm's stock prices. The intent of the Sarbanes-Oxley Act was to improve the quality of financial reporting and to ultimately increase investor confidence in the market. This was due to the huge corporate scandals that ultimately cost investors billions of dollars. This affected public investor confidence in the United States and security markets due to the perceived increased risk in investing in the equity markets. Section 404 of SOX requires that management report their findings in a special management's report and that an outside auditor attests to the management's assessment of the company's controls. According the SEC, "Section 404 procedures are

intended to help companies detect fraudulent reporting early and deter financial fraud, directly improving the reliability of financial statements "(Kamar). SOX had good initial intentions to assure the integrity in U.S. financial markets and restore investor confidence in corporate governance, financial reports, and related audit functions.

According to the SEC "the cost of complying with SOX 404 impacts smaller companies disproportionately, as there is a significant fixed cost involved in completing the assessment" (Chilling). I created a comparable company analysis model to find the average intrinsic value of 45 small cap technology companies versus 45 large cap technology companies. "Firms in technology-intensive industries tend to rely heavily on innovation…they tend to be high-growth firms that invest heavily in R&D projects…as a result, these firms may be relatively difficult to value and therefore have more volatile stock prices" (Goessl). From these findings I compiled the effects of the comparable company analysis model. The analysis in fact showed that smaller public tech firms had a negative percentage change in intrinsic value from Pre SOX to Post SOX periods compared to their larger complement. This could indicate compliance cost associated with SOX had more of an impact on small cap tech firm's net income, thus slowing down their potential percentage change in their intrinsic value compared to large cap companies in the same industry.

I believe that although the intentions of Sarbanes-Oxley had the best interest of the investor in mind, ultimately it had adverse effects due to high compliance costs associated with the new law. This greatly affected smaller firms who have few resources, thus enjoy lesser economies of scale and smaller investments. The costs included in compliance with Section 404 of Sarbanes-Oxley are external auditor fees, directors and officers (D&O) insurance, board compensation, lost productivity, and legal costs. This can be a great burden for a smaller cap

firm, specifically a smaller technology firm. This is because of tech company's high emphasis on innovation, where most of their capital is invested into projects. For example, a small cap tech company competing with Apple will spend a lot on research and development to compete with a larger competitor. Since that small cap technology companies have higher barriers to entry, any time and money allocated on compliance with Section 404 of SOX would ultimately affect its stock price for the future. Even with the intentions of Sarbanes-Oxley having best interest of the investor in mind, ultimately it had adverse effects due to high compliance costs associated with this piece of legislation.

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[1] All data for stock prices and any other non-sourced exhibits and tables is pulled from Bloomberg in the time frame of January 1, 1999 – January 1, 2001 and January 1, 2007 – January 1, 2009.