The Sarbanes-Oxley Act: A Cost-Benefit Analysis Using The U.S. Banking Industry

Philip H. Siegel, Augusta State University, USA
David P. Franz, San Francisco State University, USA
John O’Shaughnessy, San Francisco State University, USA

ABSTRACT

There are many analyses of the economic effects that regulations, in general, and Sarbanes-Oxley Act, in particular, have had on American business. This analysis looks at the effect that the Sarbanes-Oxley Act has had on the American banking industry. The return on assets and return on equity were obtained from the Federal Reserve Bank for all SEC-registered and nonregistered banks for the period 2000 through 2005. Comparative results indicate that during the period that the Act had been in effect there is a marked negative divergence for SEC-registered banks as opposed to those banks that do not report to the SEC.

INTRODUCTION

Government regulations can have profound effects on industry. Regulation can be defined as the government directly “prescribing and proscribing what private sector agents can and cannot do, so that their actions do not contradict the ‘public interest.’” (Chang, 1997) Prescribing or proscribing actions can be both productive and costly for a firm as well as the public. The resulting regulations of the 2002 Sarbanes-Oxley Act (SOX) have been described as being costly to U. S. business. By comparing the returns on assets (ROA) and returns on equity (ROE) of registered (SEC reporting) vs nonregistered (nonSEC reporting) U.S. banks, this study attempts to determine if SOX has had a detrimental effect on registered banks.

The Economic Effect of Regulations

Benston (1976) discussed the U.S. experience of industry regulation. He noted that once power is granted to a “regulatory agency, they almost never contract and almost always expand, regardless of their demonstrated lack of efficacy for solving problems or propensity to create new problems.” This is mirrored by Joshi, Krishnan, and Lave (2001), Meyer (1975), and Peterson (1975) found that higher costs are usually associated with a regulated environment and that sometimes, the regulatory costs are not worth the benefits. This is also suggested in Hahn’s (1998) research.

Regulatory policies can have a detrimental economic effect for entire industries as well as the U.S. economy. Analyses of U. S. regulations indicate that they hinder American railroads, insurance industry, and public utilities (Caves, Christensen and Johnson, 1981), (Darby, 2007), (Taggart, 1985), (Pociask and Fuhr, 2007). Regarding the U.S. economy, according to Gray (1987) OSHA and EPA regulations were responsible for over 30 percent of the economic slowdown in the 1970’s.

Over-regulation (Harvard Law Review 2003) can become counterproductive. Companies can become routinized in regulatory compliance in such a manner that they are adhering to the letter of the law but not the spirit. Niskanen (2007) theorized that the U.S. capital markets may be dangerously over-regulated. He cites two recent reports: the Committee on Capital Markets Regulation’s report documenting the declining U.S. competitiveness and the Schumer-Bloomberg Report which warned that U.S. financial service revenues would fall between $15 billion and $30 billion a year without a major change in the public policies affecting US capital markets.
Regulations Concerning Accounting

Regulations also appear in the form of required accounting disclosure and can produce beneficial effects. A company’s credibility can be enhanced by consistent and effective disclosure (Gibbons, Richardson, and Waterhouse, 1990). Increased disclosure benefits firms and the capital markets (Leuz and Verrecchia, 2000), (Dhaliwal, 1979), (Meier-Schatz, 1986).

On the other hand mandatory disclosure can be cumbersome and costly. Research by Admati and Pfleiderer (2000) suggests that the diverse nature of industries make it difficult to design effective universal disclosure. According to Benston (1977) an unaware public pays for government-required accounting disclosure. Sunstein (1999) claims that disclosure of information allows the federal government to control public and private conduct.

Foreign Corrupt Practices Act

Over the decades accounting regulations have come from various sources. The Securities and Exchange Commission as well as the Internal Revenue Service and Interstate Commerce Commission are examples of regulatory bodies that promulgate accounting regulations. A more recent example occurred during the 1970s. During the Watergate era there were a number of investigations, some of which affected American business. One of the investigations, conducted by the Securities and Exchange Commission (SEC) in 1975, revealed that 19 publicly-held corporations had made illegal campaign contributions and that these contributions were made from cash accounts that had not been recorded on the corporation’s books. (Heldack, 1977) This prompted the SEC to launch an investigation into what were considered “questionable payments.” What came out of the investigation was that many U.S. multinational corporations were making hundreds of millions of dollars in “questionable payments” to foreign officials to obtain business.

As a result, the Foreign Corrupt Practices Act (FCPA) was unanimously adopted by Congress in 1977. Bribery of foreign officials to obtain business for the corporation became illegal but the FCPA also included a second provision requiring all publicly-held companies establish an effective system of internal controls. This was in response to revelations that payments to foreign officials were paid with “off-the-books” cash accounts.

Some of the research into the effects on American business by the FCPA indicates that the anti-bribery provision of the Foreign Corrupt Practices Act has cost the U.S. in terms of lost business and competitive advantage. (Koretz 1996), (Beck, Maher, and Tschoegl, 1991), (Kaikati, and Label 1980). On the other hand there are studies that indicate the opposite; that the anti-bribery provision has been beneficial to U. S. business. (Graham, 1984), (Richman 1979)

Regarding the internal control provision, Maher (1981) found that, while some benefits would accrue from the FCPA provision, it has led to costly compliance efforts. For instance, the FCPA affected significantly the internal auditing department budget. One poll indicated during the period 1978 through 1982 internal audit budgets across the U.S. increased approximately 79 percent. (Baird and Michenzi, 1983)

National Commission on Fraudulent Financial Reporting

During the 1980s there was a number of management frauds perpetrated against investors – (eg. ESM Government Securities and ZZZZ Best). A round of congressional hearings on regulating the accounting profession ensued. As a possible countermeasure by industry a jointly-sponsored commission (American Institute of Certified Public Accountants, Institute of ManagementAccountants, Institute of Internal Auditors, Financial Executives Institute, and the American Accounting Association) called the National Commission on Fraudulent Financial Reporting (informally called the Treadway Commission) was chaired by James C. Treadway, former commissioner of the Securities and Exchange Commission, made 49 recommendations many of which were direct toward public companies and regulatory agencies. (Committee of Sponsoring Organizations, 1987) While the recommendations are not considered regulations per se, their purpose was to stave off further governmental regulation.
Among the recommendations were calls for stronger internal controls, more effective corporate internal audit function and better external auditor fraud detection. Some of the research that followed these recommendations placed emphasis in these areas. There were studies and discussions regarding the resulting increased audit fees and internal control costs, that auditors were deterrents to fraud, and that internal auditing could lessen external audit fees (Matsumura and Tucker, 1992), (Copley, Doucet, and Gaver, 1994), (Schneider and Wilner, 1990), (Felix, Gramling, and Maletta, 2001) (CA Magazine, 1994).

**Sarbanes-Oxley Act**

In response to the Arthur Andersen, Enron and WorldCom-era debacles, Congress passed “Public Company Accounting Reform and Investor Protection Act” in July 2002. Sponsored by Mike Oxley (R-OH) and Paul Sarbanes (D-MD) the Act has become popularly known as the “Sarbanes-Oxley Act” (Act or SOX). The purpose of the Act is to restore public confidence in both public accounting and publicly-traded securities as well as promote better ethical business practices through greater executive awareness and accountability.

One of the costly aspects to SOX comes from section 404 whereby:

Section 404 of the Act directs the Commission [SEC] to adopt rules requiring each annual report of a company, other than a registered investment company, to contain (1) a statement of management's responsibility for establishing and maintaining an adequate internal control structure and procedures for financial reporting; and (2) management's assessment, as of the end of the company's most recent fiscal year, of the effectiveness of the company's internal control structure and procedures for financial reporting. Section 404 also requires the company's auditor to attest to, and report on management's assessment of the effectiveness of the company's internal controls and procedures for financial reporting in accordance with standards established by the Public Company Accounting Oversight Board (PCAOB). (SEC 2003)

The Act is costly to administer. Both the PCAOB and SEC are adding staff to cope with the additional work necessary to implement the Act. Rouse, (2005) points out that the PCAOB was established in January 2003 with a staff of eight. By the end of 2005 there were more than 450 staff members with a budget in excess of $150 million. The SEC hired an additional 1,000 staff because of SOX.

The Act has had a negative effect on American industry. Successive studies by the Financial Executives International expound on this effect. The results of a January 2004 survey of 321 companies (FEI 2004a) indicated the Act cost an average of $1.3 million in spending on external consulting and software, with additional audit fees of $1.5 million (a jump of 35 percent).” By July 2004, FEI (2004b) another survey indicated the total cost of compliance was estimated to be 62% more than the January 2004 survey. A 2005 survey (FEI 2005) indicated a 39% increase from the July 2004 survey. In a 2007 survey (FEI 2007) those companies with market capitalizations more than $75 million had an average cost of internal control compliance to be $2.9 million during fiscal year 2006. This last survey runs counter to Rittenberg and Miller’s (2005) contention that SOX costs may be leveling-off.

Other studies found similar issues – substantial increases in audit fees and negative effects on stock prices and the U.S. capital markets leading up to the passage of SOX (Griffin and Lont, 2004) (Ge and McVay, 2005), (Solomon and Bryan-Low, 2004), (Bargeron, Lehn, and Zutter, 2007) (Zhang, 2005).

Litvak (2007) attempted to examine the costs and benefits of SOX using a treatment group of non-US firms that are cross-listed on the US exchanges and matching those firms with other non-US firms to control for country, industry, and size. Litvak last event date was October 22, 2002 and found negative returns for the cross-listed firms. This study also compares a treatment group of firms subject to Sox with a control group not subject to SOX, but we use US firms in both groups and use a final date of 2005 to allow more time for the benefits of SOX to manifest themselves. We also examine reported profitability rather then stock prices because stock prices are not available for our control group.
Regulations and the Banking Industry

Banking regulations appear to increase the cost of bank operations. According to the American Banking Association (ABA) and Federal Reserve, (Simmons, 2005), the cost of regulation in the banking industry ranges from $34 billion to $42 billion a year, not including the costs of the “Patriot Act, Sarbanes-Oxley, the Gramm-Leach-Bliley Act, additional promulgations of the Securities and Exchange Commission, Financial Accounting Standards Board, and Public Company Accounting Oversight Board.” Other studies found that regulations add to bank and consumer costs, limit performance, while not increasing reporting information, (Benston and Kaufman, 1996), (Hagerman, 1975), (Bordo, Rockoff, and Redish, 1994) According to Jayaratne and Strahan (1998) it appears that SOX regulations may have many of those same idiosyncracies. Fernandez and Toto (2005) found that SOX increases bank costs and decreases bank CEO time availability to develop new business. Recently, Siegel et al. (2009) found evidence that the Sarbanes-Oxley Act may negatively impact U. S. banks.

In an attempt to relieve some of the cost pressures emanating from SOX, Thomas Venables, in testimony on behalf of the ABA (SEC 2007) before the Senate Committee on Small Business and Entrepreneurship, stated that because of the “increasing cost of being a registered public company, a number of small businesses, especially some of our member community banks, have determined that deregistration is in the best interests of their shareholders.”

RESEARCH DESIGN

There are many studies indicating that SOX has added a substantial cost to U.S. business. However, many of the benefits of the Acts increased internal controls, such as better decision making and reduced potential for fraud, are difficult to quantify. American banks that fall under the mandates of the Securities and Exchange Commission (SEC) are required to implement SOX, hereafter referred to as “Registered Banks,”. However, many American banks are privately owned and are not required to follow the requirements of the SEC and SOX hereafter referred to as “Nonregistered Banks.” By comparing the operating results of these two classes of banks during the period that the Act has been in place, we may be able to evaluate the cost and benefits of SOX.

Research suggests that there is no innate operational efficiency based upon the manner in which a bank is owned: public or private. In their findings of the German banking industry Altunbas et al. (2001) found that inefficiency measures indicate that economies of scale have more influence over the efficient operation of banks than does the type of ownership.

In an attempt to isolate the impact of SOX we use an experimental design with the Nonregistered banks acting as the control group and the Registered banks as the treatment group. The year 2005 was selected as an attempt to reduce the impact of the 2008 financial crisis on the firm’s results. In 2005 the Registered banks will have implemented SOX, hence received the treatment, while the Nonregistered banks will not have been required to implement SOX and serve as a control group. This relationship is summarized in Table 1 below:

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2005</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registered banks</td>
<td>Control</td>
<td>Treatment – SOX applied</td>
</tr>
<tr>
<td>Nonregistered Banks</td>
<td>Control</td>
<td>Control – SOX Not required</td>
</tr>
</tbody>
</table>

There are many differences between the Registered and Nonregistered banks besides the implementation of SOX. To minimize the impact of these individual differences, we use data from the year 2000 which was selected
because that is before SOX was implemented. Therefore, in 2000 neither the Registered banks nor Nonregistered banks will have been impacted by SOX. For each individual bank (i), we take the return on assets (ROA), and subtract the 2000 ROA for bank i from the 2005 ROA for bank i to yield a change in ROA:

\[ \Delta \text{ROA}_i = \text{ROA}_{i, 2005} - \text{ROA}_{i, 2000} \]

The same approach is used for Return on Equity (ROE):

\[ \Delta \text{ROE}_i = \text{ROE}_{i, 2005} - \text{ROE}_{i, 2000} \]

By focusing on the change in returns for each individual bank, this should remove many of the unique factors impacting individual banks and help to isolate the treatment effect. If the costs and benefits of SOX are approximately equal then the mean \( \Delta \text{ROA} \) for the registered and nonregistered banks should be the same. If the benefits of SOX exceed the costs, then the mean \( \Delta \text{ROA} \) of the Registered banks should be greater than the mean \( \Delta \text{ROA} \) of the Nonregistered banks. If the costs of SOX exceed the benefits then the mean \( \Delta \text{ROA} \) of the Registered banks should be less than the mean \( \Delta \text{ROA} \) of the Nonregistered banks:

\[ \text{H}_01: \text{ The mean of the Registered banks } \Delta \text{ ROA} \text{ is equal to the mean of the Nonregistered banks } \Delta \text{ROA}. \]

\[ \text{H}_{A1}: \text{ The mean of the Registered banks } \Delta \text{ ROA} \text{ is not equal to the mean of the Nonregistered banks } \Delta \text{ROA}. \]

We will also test the impact on ROE with the same expectations as ROA:

\[ \text{H}_02: \text{ The mean of the Registered banks } \Delta \text{ ROE} \text{ is equal to the mean of the Nonregistered banks } \Delta \text{ROE}. \]

\[ \text{H}_{A2}: \text{ The mean of the Registered banks } \Delta \text{ ROE} \text{ is not equal to the mean of the Nonregistered banks } \Delta \text{ROE}. \]

**DATA SELECTION AND DESCRIPTIVE STATISTICS**

In order to obtain the ROA and ROE data necessary for testing the above hypotheses U.S. bank financial data was collected from Federal Reserve archives for the years 2000 through 2005. The data included total assets, return on assets, return on equity and was segregated for “Registered” vs “Nonregistered” banks.

Exhibit 1 represents a summary of the mean and median of assets for Registered Banks and Nonregistered Banks. Although there are more Nonregistered Banks (878 to 1,525 vs 582 to 806) the Registered Banks are larger in terms of assets due to the fact that they have more shareholders and therefore a larger capital base.

<table>
<thead>
<tr>
<th>Year</th>
<th>Registered Banks</th>
<th>Nonregistered Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
</tr>
<tr>
<td>2000</td>
<td>$10,084,592</td>
<td>$548,264</td>
</tr>
<tr>
<td>2001</td>
<td>$10,683,614</td>
<td>$571,350</td>
</tr>
<tr>
<td>2002</td>
<td>$10,678,611</td>
<td>$578,359</td>
</tr>
<tr>
<td>2003</td>
<td>$11,289,990</td>
<td>$590,282</td>
</tr>
<tr>
<td>2004</td>
<td>$13,481,377</td>
<td>$614,897</td>
</tr>
<tr>
<td>2005</td>
<td>$15,833,654</td>
<td>$666,194</td>
</tr>
</tbody>
</table>

**Number of Banks**

<table>
<thead>
<tr>
<th></th>
<th>Registered Banks</th>
<th>Nonregistered Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of</td>
<td>582 to 806</td>
<td>878 to 1,525</td>
</tr>
</tbody>
</table>

77
DESCRIPTIVE STATISTICS AND HYPOTHESIS TESTS FOR CHANGE IN ROA AND ROE

Descriptive statistics for the ∆ROA from 2000 to 2005 for Registered and Nonregistered banks are included in Exhibit 2.

As summarized in Exhibit 3, to test the difference in means, we use a two-tailed t-test with equal variances and found a probability of 5.10148 E⁻⁵. Therefore we can reject the null hypothesis 1 and conclude that the costs of SOX exceed the benefits since the mean of the ∆ROA is negative for the Registered Banks and positive for the Nonregistered banks.

Descriptive statistics for the ∆ROE from 2000 to 2005 for Registered and Nonregistered banks are included in Exhibit 4.
Exhibit 4
∆ROE from 2000 to 2005

<table>
<thead>
<tr>
<th></th>
<th>Registered Banks</th>
<th>Nonregistered Banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>548</td>
<td>826</td>
</tr>
<tr>
<td>Mean</td>
<td>0.858850365</td>
<td>0.666598063</td>
</tr>
<tr>
<td>Range</td>
<td>-121.16 to 41.96</td>
<td>-59.07 to 60.23</td>
</tr>
<tr>
<td>Variance</td>
<td>60.834</td>
<td>54.047</td>
</tr>
</tbody>
</table>

Exhibit 5 summarizes the results of the test of the difference in means for Return on Equity (ROE). We use a two-tailed t-test with equal variances and found a probability of 0.000246763. Therefore we can reject the null hypothesis 2 and conclude that the costs of SOX exceed the benefits since the mean of the ∆ROE is negative for the Registered Banks and positive for the Nonregistered banks.

Exhibit 5

<table>
<thead>
<tr>
<th></th>
<th>Registered</th>
<th>Nonregistered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>-0.858850365</td>
<td>0.666598063</td>
</tr>
<tr>
<td>Variance</td>
<td>60.83485188</td>
<td>54.04736332</td>
</tr>
<tr>
<td>Observations</td>
<td>548</td>
<td>826</td>
</tr>
<tr>
<td>Pooled Variance</td>
<td>56.75345387</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>1372</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>-3.675262115</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.000123381</td>
<td></td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.645965001</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.000246763</td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>1.961694498</td>
<td></td>
</tr>
</tbody>
</table>

SUMMARY AND CONCLUSIONS

This analysis found that since the means of the ∆ROA and ∆ROE are negative for the Registered Banks and positive for the Nonregistered banks. This finding together with the Altunbas et al. (2001) study indicating that economies of scale have more influence over the efficient operations of banks than do the types of bank ownership: public (i.e. SEC reporting) vs private may indicate that for Registered banks, the costs of SOX exceed the benefits.

There are recommendations being made by the banking industry to the SEC. The American Banking Association (SEC 2007) recommends updating the Exchange Act registration shareholder threshold to between 1500 and 3000 record shareholders and change the threshold for deregistration to be 900 to 1800 record shareholders. Currently according to Section 12(g) of the Securities Exchange Act of 1934 (SEC 2004b) any issuer engaged in
interstate commerce or whose securities are traded by use of the mails or any means of interstate commerce and has assets exceeding $1,000,000 and equity securities held by five hundred or more must file a registration statement with the SEC, thus making the company subject to SOX. To obtain an exemption (SEC 2007) to the Section 12(g) requirements as per Rule 12h-3(b)(1), the SEC can allow a companies to deregister if they have less than $10 million in assets or less than 300 shareholders.

For its part, the SEC appears receptive to constructive recommendations regarding SOX. According to Nicolaisen, Chief Accountant for the Securities and Exchange Commission in a speech at the 11th Annual Midwestern Financial Reporting Symposium in 2004 (SEC 2004a) stated that “the burden [of SOX] to smaller companies may be disproportionately higher and needs to be appropriately weighed as we determine the best ways to protect investors. This balancing act is something that I will continue to monitor closely, and it is also an important consideration for the PCAOB and for the FASB. Clearly we all need to strike the right balance… I can assure you that where changes in our rules are needed, I will support such change.”

In any event Sarbanes-Oxley appears to have presented a challenge to American business. Because the Act is relatively new, research has been limited; thus, conclusions drawn by this paper have a major limitation concerning the effect of Sarbanes-Oxley on the banking industry.

AUTHOR INFORMATION

Philip H. Siegel, Currently the Peter S. Knox, III distinguished chair of accounting at Augusta State University. He secured his Ph.D. in accounting from the University of Memphis and is a CPA (state of Florida). His research has appeared in Journal of Business Ethics; Journal of Accounting, Auditing, & Finance; Journal of Applied Business Research; Journal of the American Taxation Association; and other peer-reviewed journals.

David P. Franz, CMA and professor of accounting, has been teaching at San Francisco State University since 1987. He earned his Ph.D. from Penn State University. He has published and presented numerous articles on four continents in journals such as Journal of Business, Finance, and Accounting; Small Business Controller; and Indian Journal of Accounting.

John O’shaughnessy, Currently a Professor of Accounting at San Francisco State University. He is a Ph.D., CPA (inactive), CIA and CMA. His research interests include accounting ethics, auditing and internal controls. His research has been published in Internal Auditing; Managerial Auditing Journal; Journal of Business Ethics; and the CPA Journal.

REFERENCES

49. Rouse, Robert W., “Companies grapple with uneasiness, confusion, and restatement,” The Journal of Corporate Accounting & Finance; Mar/Apr 2005; 16, 3; pg. 93


