

## **SECTION 404 OF SARBANES-OXLEY ACT: DID THE STOCK MARKET ANTICIPATE IT?**

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### **ABSTRACT**

With the passage of the Sarbanes-Oxley Act [SOX], substantial new internal control disclosures are required of publicly traded companies. This paper examines the relationship between internal control and SOX and analyzes evidence found in the timing of stock market price adjustments that appears to support the semi-strong efficient market hypothesis relative to internal control disclosures. Our conclusion is that stock price behavior for companies with material weaknesses in internal control reflects the additional risk associated with the weakness and this reflection occurs before the SOX mandated public disclosure of the weakness.

### **SARBANES-OXLEY BACKGROUND**

In many eyes, Enron started it all. Once a profitable Fortune 500 diversified energy company, in 2001, Enron began a well documented descent from financial glory to becoming synonymous with corporate fraud, deceit and financial failure. On December 2, 2001, Enron filed for bankruptcy protection leaving investors holding the bag for an estimated \$60 billion loss.

The legacy of Enron is being written by Congress as well as by the bankruptcy court. Reacting to investor outrage, Congress

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quickly passed SOX. This law, billed as a much-needed shareholder protection package, resulted in large part in response to the Enron debacle. When signing the bill into law on July 30, 2002, President Bush highlighted his thoughts on the importance of the law to investors when he stated, “This law says to shareholders that the financial information you receive from a company will be true and reliable, for those who deliberately sign their names to deception will be punished”<sup>1</sup> In fact, the bill itself states that it is an act “to protect investors by improving the accuracy and reliability of corporate disclosures made pursuant to the securities laws, and for other purposes.”<sup>2</sup> Taking its place beside the Securities Act of 1933 and the Securities Exchange Act of 1934, SOX raises the bar on disclosure and is intended to put real teeth into fraud enforcement.

SOX takes a multifaceted approach to addressing shareholder concerns about financial statement quality and strengthening investor faith in the stock market (and corporate America). The act reshaped the composition of corporate audit committees, requiring that committee members have financial expertise, and also set-up an outside organization to audit the auditors (The Public Company Accounting Oversight Board or PCAOB). The act also authorized funding for additional SEC enforcement. In direct response to Enron, SOX provides limits on corporate loans to executives and ordered that special purpose entities be studied. Organizational internal controls became a centerpiece of the act with tighter controls mandated in many cases and additional disclosure and attestation of control adequacy in all cases. Finally, SOX increases penalties for fraud and clearly establishes the responsibility for financial statements with company CEO’s and CFO’s. The “teeth” of these elements of the

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<sup>1</sup> Whitehouse, “President Bush Signs Corporate Corruption Bill,” <http://www.whitehouse.gov/news/releases/2002/07/print/20020730.html> (Accessed July 21, 2005).

<sup>2</sup> U.S. House of Representatives, Committee on Financial Services, “Sarbanes-Oxley Act of 2002: Public Law 107-204: Washington D.C.: Government Printing Office.

act rests in the potential imposition of financial and criminal sanctions, not just on companies but on the CEO's and CFO's personally.<sup>3</sup>

### **A FOCUS ON INTERNAL CONTROL**

Of the 69 sections in SOX, section 404 garners the most attention from companies. This section focuses on internal control, requiring considerable investment by companies in analyzing, documenting, and testing internal control processes in order to meet SOX guidelines.<sup>4</sup> Internal control is not a fad or flavor of the month management theory. Internal control, a subject taught students in their first semester of business school, in its simplest form, establishes a set of accounting and management procedures or systems designed to increase efficiency, ensure policies are implemented, and assets are safeguarded.<sup>5</sup> Section 404 of SOX makes the existence and effective implementation of internal control a lynchpin in providing investor protection.

Accountants have previously attempted to raise the understanding and focus on internal control. The Committee of Sponsoring Organizations of the Treadway Commission (COSO), in its 1992 published report, defined internal control as "a process, effected by an entity's board of directors, management and other personnel, designed to provide reasonable assurance regarding the achievement of objectives in three categories--effectiveness and efficiency of operations; reliability of financial reporting; and compliance with applicable laws and regulations."<sup>6</sup> The report

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<sup>3</sup> American Institute of Certified Public Accountants, "Summary of Sarbanes-Oxley Act of 2002," [http://www.aicpa.org/info/sarbanes\\_oxley\\_summary.htm](http://www.aicpa.org/info/sarbanes_oxley_summary.htm) (Accessed July 21, 2005).

<sup>4</sup> U.S. House of Representatives, Committee on Financial Services.

<sup>5</sup> Ryan Beck and Co., "Investment Glossary," [http://www.rbeck.com/ryan\\_beck2/invest\\_glosry\\_IntInu.htm](http://www.rbeck.com/ryan_beck2/invest_glosry_IntInu.htm) (Accessed on August 23, 2005).

<sup>6</sup> Securities and Exchange Commission, "Final rule: Managements' reports on Internal Control Over Financial Reporting and Certification of Disclosure in Exchange Act Periodic Reports," <http://www.sec.gov/rules/final/33-8238.htm> (Accessed on July 21, 2005).

provided both a common language for understanding and a practical way for companies to assess and improve their control systems.<sup>7</sup> This definition of internal control was eventually adopted by the AICPA in Statement on Auditing Standards (SAS) No. 78.<sup>8</sup>

Building on the work of COSO, SOX redefines internal control related to financial reporting. The SEC incorporated practitioner comments and published final rules for implementation of SOX Section 404. These rules define internal control over financial reporting as:

“a process designed by, or under the supervision of, the registrant's principal executive and principal financial officers, or persons performing similar functions, and effected by the registrant's board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- (1) Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the registrant;
- (2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the registrant are being made only in accordance with authorizations of management and directors of the registrant; and
- (3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or

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<sup>7</sup> Richard Steinberg and Frank Tanki, “What the Treadway Commission's Internal Control Study Means to You,” *Journal of Accountancy* 174, No. 5 (November, 1992): 29-32.

<sup>8</sup> David Frazier and L. Scott Spradling, “The New SAS No. 78.” <http://www.nyssecpa.org/cpajournal/1996/0596/features/f40.htm> (Accessed on July 21, 2005).

disposition of the registrant's assets that could have a material effect on the financial statements.”<sup>9</sup>

Therefore, SOX, does not merely redefine internal control. Taking a step beyond accounting requirements, internal control by statute, is now arguably the centerpiece in the preparation and audit of financial statements.

### **THE ROLE OF INTERNAL CONTROL BEFORE SOX**

Prior to enactment of SOX, internal controls played a key role in a business's ability to prepare financial statements and in an external auditor's ability to attest to the fairness of these statements. Financial statements are the output of an accounting process which collects, processes, and summarizes hundreds, thousands, or even millions of a business's transactions. In most cases, external auditors can not observe every transaction of a given company. Therefore, the auditor relies on the system of internal controls the business has designed and put in place. If an auditor is convinced that an internal control is adequately designed, audit testing can determine whether the control is effectively in operation. If the control is functioning as designed, the auditor can then rely on it and reduce the substantive testing necessary during the audit. If however, a control is improperly designed or operationalized, the auditor will not rely on the control and must perform additional testing to support the opinion to be expressed on the company's financial statements.<sup>10</sup>

### **INTERNAL CONTROL IN A POST-SOX WORLD**

Section 404 of SOX establishes specific requirements regarding internal control and public disclosure. Companies still design and operate internal control systems as before; however, post-SOX, a company's annual report must include an internal control report of management that contains:

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<sup>9</sup> Securities and Exchange Commission.

<sup>10</sup> Securities and Exchange Commission.

- “1) A statement of management's responsibility for establishing and maintaining adequate internal control over financial reporting for the company;
- 2) A statement identifying the framework used by management to conduct the required evaluation of the effectiveness of the company's internal control over financial reporting;
- 3) Management's assessment of the effectiveness of the company's internal control over financial reporting as of the end of the company's most recent fiscal year, including a statement as to whether or not the company's internal control over financial reporting is effective. The assessment must include disclosure of any "material weaknesses" in the company's internal control over financial reporting identified by management. Management is not permitted to conclude that the company's internal control over financial reporting is effective if there are one or more material weaknesses in the company's internal control over financial reporting; and
- 4) A statement that the registered public accounting firm that audited the financial statements included in the annual report has issued an attestation report on management's assessment of the registrant's internal control over financial reporting.”<sup>11</sup>

SOX also requires corporations to file, as part of the company's annual report, the internal control attestation report issued by the registered public accounting firm that audited the company's financial statements.

### **MATERIAL WEAKNESSES**

Under SOX, a company must now specifically disclose the effectiveness of its internal control systems and auditors must attest to the level of internal control effectiveness. Internal control systems which have one or more “material weakness” will be

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<sup>11</sup> Securities and Exchange Commission.

considered ineffective. As such, the term “material weakness” becomes an important component in the design, operation and audit of a company’s system of internal controls. A material weakness is a significant deficiency, or combination of significant deficiencies, that results in more than a remote likelihood that a material misstatement of the annual or interim financial statements will not be prevented or detected.<sup>12</sup> As such, a material weakness is an internal control deficiency which has the potential to cause a misstatement of an account balance or disclosure in a company’s financial reports. A misstatement in a financial report does not have to occur in order for there to be a material weakness, only the potential for misstatement need be present.

#### **BUSINESS’ REACTION TO SECTION 404 OF SOX**

Business’ reaction to SOX, in particular to the Section 404 requirements on internal control, is mixed. SOX offers an opportunity for companies with effective internal control to demonstrate that they are different from the Enron’s of the world. A clean opinion on internal control effectiveness from a company’s auditors, post-SOX, does just that. Further, SOX can be seen as not only a compliance requirement, but also as a proactive step. Martin found it to be a means to reinvigorate efforts to halt manipulation of financial reporting and asset misappropriation.<sup>13</sup> Rittenberg and Miller identified a broad spectrum of areas which benefited from SOX-related improvements in controls. These included 1) control over high-risk accounting areas, 2) information technology controls, 3) anti-fraud processes and 4) routine accounting controls.<sup>14</sup>

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<sup>12</sup> Public Company Accounting Oversight Board, “Auditing Standard No. 2 Available at [http://www.pcaobus.org/Rules/Rules\\_of\\_the\\_Board/Auditing\\_Standard\\_2.pdf](http://www.pcaobus.org/Rules/Rules_of_the_Board/Auditing_Standard_2.pdf),” (Accessed on July 21, 2005).

<sup>13</sup> Alyssa Martin, “How Section 404 Can Help Deter Fraud,” *Financial Executive* 21, No. 4 (May, 2005): 45-47.

<sup>14</sup> Larry Rittenberg, and Patricia Miller, “The Good News About Compliance,” *Internal Auditor* 62, No. 3 (June, 2005): 55-60.

Despite a generally positive reception from investors, some business reactions to SOX have been negative. These negative reactions to SOX generally focus on the costs of SOX implementation, in particular section 404. A study by the Financial Executives International pegged the average annual cost of SOX compliance at \$4.36 million per company for the 217 publicly held companies surveyed.<sup>15</sup> Public companies with annual revenues greater than \$8 billion estimated internal control compliance costs at \$14.1 million per company per year on average.<sup>16</sup> Total SOX costs for all companies for the upcoming year have been estimated to be \$5.8 billion<sup>17</sup> to \$6.1 billion.<sup>18</sup> Net private costs of SOX have been estimated to be \$1.4 trillion.<sup>19</sup> However, not all comments focused solely on the cost of compliance. A recent CFO magazine survey found that only 30 percent of CFO's surveyed thought the benefits of SOX outweigh the costs. The survey also found non-financial negative fallout from SOX implementation, including a fear of personal liability so great that managers are afraid to take risks on innovation.<sup>20</sup> Finally, some companies are evaluating "going private", forgoing SEC registration, and escaping the cost of complying with SOX.<sup>21</sup>

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<sup>15</sup> Financial Executives Institute, "FEI Special Survey on Sarbanes-Oxley Section 404," [http://64.233.161.104/custom?q=cache:PHuvoffknLUJ:www.fei.org/chapter/Dallas/files/Newsletter\\_Apr2005\\_print\\_final.pdf++++++217&hl=en&ie=UTF-8](http://64.233.161.104/custom?q=cache:PHuvoffknLUJ:www.fei.org/chapter/Dallas/files/Newsletter_Apr2005_print_final.pdf++++++217&hl=en&ie=UTF-8) (Accessed on July 21, 2005).

<sup>16</sup> *Chemical Market Reporter*, "Sarbanes-Oxley Section 404 Raises Concerns," *Chemical Market Reporter* 267, No. 18 (May 2-8, 2005) 30.

<sup>17</sup> Eric Bellman, "One More Cost Of Sarbanes-Oxley: Outsourcing to India," *The Wall Street Journal*, July 14, 2005.

<sup>18</sup> Richard Rahn, "Destructive Government," *Washington Times* (June 16, 2005).

<sup>19</sup> Ivy Zhang, "Economic Consequences of the Sarbanes-Oxley Act of 2002," <http://www.aei-brookings.org/admin/authorpdfs/page.php?id=1154> (Accessed on July 21, 2005).

<sup>20</sup> Alix Stuart, "Sticker Shock: The Cost of Sarbanes-Oxley Compliance," *CFO Magazine* (September, 2003).

<sup>21</sup> *The Economist*, "Damaged Goods, Will Sarbanes-Oxley Put Things Right?" *The Economist* 375, No. 8427 (May 21, 2005) 71-73.

### **STOCK MARKET REACTION TO SECTION 404 OF SOX**

Despite some anticipated negative business reaction to SOX, no one has seriously questioned the underlying need for effective internal control. Modifications to SOX are a common topic on the business speaker's circuit but a repeal of SOX is not being universally advocated. Companies benefit from effective internal control. All other things equal, these companies should expect higher stock valuations than those with ineffective internal control systems. Investors, with the option of owning stock in either of two equivalent companies which differ only on the level of effectiveness of internal control, should logically choose the company with the effective control system. A study by MORI and Price Waterhouse Coopers, found three-quarters of investors and analysts said they were likely to sell or mark down the shares of companies that reported ineffective internal controls against fraud.<sup>22</sup> Decisions by multiple investors to sell such a stock would likely have a negative impact on the stock's price. Leone, in a recent article reported that companies reporting material internal control weaknesses saw their stock under-perform the general market after the weakness was announced.<sup>23</sup> Similar studies have evaluated market reaction to other "bad news" announcements such as earnings restatements and have found negative price reaction.<sup>24</sup>

### **REPORTING MATERIAL WEAKNESSES IN INTERNAL CONTROL UNDER SOX**

Under SOX, a company must report material weakness in internal control in the firm's annual report (Form 10-K) for fiscal periods ending on or after November 15, 2004 (if the company is

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<sup>22</sup> Market and Opinion Research International, "Sarbanes-Oxley Section 404 — A Global Capital Market View," <http://www.mori.com/polls/2005/pwc.shtml> (Accessed on July 21, 2005).

<sup>23</sup> Marie Leone, "How Markets Punish Material Weaknesses," [http://www.cfo.com/article.cfm/4197475?f=home\\_featured](http://www.cfo.com/article.cfm/4197475?f=home_featured) (Accessed on July 21, 2005).

<sup>24</sup> Hemang Desai, Chris Hogan, and Michael Wilkins, "The Reputational Penalty for Aggressive Accounting Earnings Restatements and Management Turnover," *The Accounting Review* 81, No.1 (January, 2005): 93.

considered an accelerated filer). An accelerated filer is a company meeting the following conditions as of the end of its fiscal year:

- A) The aggregate market value of the voting and non-voting common equity held by the issuer's non-affiliates is \$75 million or more.
- B) The issuer has been subject to the requirements of Section 13(a) or 15(d) of the Securities Exchange Act, as amended (the .1934 Act.), for a period of at least 12 calendar months.
- C) The issuer has filed at least one annual report pursuant to Section 13(a) or 15(d) of the 1934 Act.
- D) The issuer is not eligible to use Forms 10-KSB and 10-QSB for its annual and quarterly reports.<sup>25</sup>

The deadline for filing annual reports with the SEC for the initial period is 60 days after fiscal yearend. As such, annual report disclosures of material weaknesses were expected to begin November 15, 2004 with the largest number of disclosures expected in the first 60 days of 2005, given the preponderance of companies with a yearend of December 31, 2004. A non-accelerated filer is required to disclose material weaknesses for fiscal years ending on or after July 15, 2005 in its next annual report.

Annual report disclosures of material weaknesses in internal control are made in the Report of Independent Registered Public Accounting Firm (the audit opinion) section of form 10-K. As an example, Toys "R" Us Inc., in the Report of Independent Registered Public Accounting Firm section of its December 2004 annual report, disclosed the following material weakness:

"We also have audited, in accordance with standards of the Public Company Accounting Oversight Board (United States), the effectiveness of Toys "R" Us, Inc.'s internal control over financial reporting as of January 29, 2005,

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<sup>25</sup> Rule 12b-2, "Definitions", <http://www.law.uc.edu/CCL/34ActRIs/rule12b-2.html> (Accessed on July 21, 2005).

based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission, and our report dated April 28, 2005, expressed an unqualified opinion on management’s assessment and an adverse opinion on the effectiveness of internal control over financial reporting.”)<sup>26</sup>

Similarly, Hibbett Sporting Goods Inc. disclosed the following in the Report of Independent Registered Public Accounting Firm section of its annual report for the fiscal year ended January 29, 2005:

“The following material weakness has been identified and included in management’s assessment as of January 29, 2005: Management identified deficiencies in the Company’s internal control over financial reporting regarding the selection, monitoring, and review of assumptions and factors affecting its lease accounting practices. As a result of these deficiencies in the Company’s internal control, previously reported annual rent expense and depreciation was understated, resulting in the restatement of the consolidated financial statements as of and for the years ended January 31, 2004 and February 1, 2003 and for the previously issued interim financial information for fiscal 2005 and 2004.”<sup>27</sup>

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<sup>26</sup> Securities and Exchange Commission, “Annual Report of Toys “R” Us Inc.” [http://edgar.sec.gov/Archives/edgar/data/1005414/000119312505090701/d10k.htm#toc64690\\_11](http://edgar.sec.gov/Archives/edgar/data/1005414/000119312505090701/d10k.htm#toc64690_11) (Accessed on July 21, 2005).

<sup>27</sup> Securities and Exchange Commission, “Annual Report of Hibbett Sporting Goods Inc.” [http://edgar.sec.gov/Archives/edgar/data/1017480/000101748005000027/f05\\_10k-amendment1.htm](http://edgar.sec.gov/Archives/edgar/data/1017480/000101748005000027/f05_10k-amendment1.htm) (Accessed on July 21, 2005).

**DID THE STOCK MARKET IDENTIFY COMPANIES WITH MATERIAL WEAKNESSES IN INTERNAL CONTROL PRIOR TO SOX?**

Obviously the stock market participants become aware of which companies have material weaknesses in internal control following disclosure of such weaknesses. Stock market reaction to these announcements has been studied.<sup>28</sup> However, this paper finds evidence that the stock market identified companies with added risk associated with material weaknesses prior to disclosure. If this is the case, this evidence should exist in the companies' stock price behavior prior to announcement of the material weaknesses. Evidence of a material weakness in internal control could manifest itself in a lower price for the stock relative to the market, when announced as Leone would suggest.<sup>29</sup> Alternatively, the impact of a material weakness could be observed in an increase in the company's beta coefficient for a year or more prior to the company's actual disclosure.

A company's beta coefficient reflects the systematic risk of that company's stock when compared to the stock market as a whole. A stock with a beta coefficient of 1 is considered to have the same level of systematic risk as the stock market as a whole. A stock with a beta coefficient which is less than 1 is considered to have less systematic risk than the stock market as a whole. Its stock price is expected to be less volatile than the overall stock market and, in general the stock is considered less risky. A stock with a beta coefficient which is greater than 1 is considered to have more systematic risk than the stock market as a whole. Its stock price is expected to be more volatile than the overall stock market and, in general the stock is considered more risky.

It is the purpose of this paper to demonstrate that, prior to implementation of SOX and disclosure by companies of material weaknesses in internal control, such weaknesses are reflected in companies' stock prices. Adjustment for such weaknesses are

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<sup>28</sup> Leone.

<sup>29</sup> Leone.

already evidenced by increases in the beta coefficient of individual stocks prior to announcement of the material weakness. Further, upon disclosure by individual companies of such material weaknesses, individual stock prices should not be dramatically affected as the disclosed weaknesses are reflected in the company's pre-disclosure stock price (consistent with the semi-strong efficient market hypothesis).

### **DESCRIPTION OF ANALYSIS**

A portfolio of companies disclosing material weaknesses in internal control during the first five months of 2005 has been identified. Five years (which includes a four year and eight month period prior to the first disclosure along with the four month period during which disclosures were made) of historic stock price data for the portfolio is compared to an industry benchmark to determine if the portfolio value changes significantly relative to the benchmark either prior to or after disclosure. Beta coefficients of the same companies disclosing material weaknesses are also analyzed to determine if the average portfolio beta coefficient varies from one during the same five year period of time.

### **DESCRIPTION OF PORTFOLIO**

A sample of 182 publicly held companies, that disclosed material weaknesses in internal control during the period of January 1, 2005 – May 31, 2005, was identified.<sup>30</sup> From that sample, 33 companies were removed because stock price data was not available for the five-year test period. (Thirty of the companies did not begin trading on a public exchange until after May, 2000. Three of the companies disclosed material weaknesses, merged with other companies, and ceased trading during the first five months of 2005.)

Additionally, 35 companies were removed from the sample because consistent beta coefficient data was not available

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<sup>30</sup> *Compliance Week*, "Internal Control Report Scorecard," Available from the Compliance Week website at <http://www.complianceweek.com/>.

for the entire five-year period of analysis. Following removal of the companies with insufficient stock price data and insufficient beta coefficient data, the analysis included a sample of 114 firms.

### **PORTFOLIO STOCK PRICE (MATERIAL WEAKNESS STOCK PORTFOLIO)**

The initial portfolio included one share of stock for each of the 114 companies disclosing a material weakness. Initial share values are actual closing prices at May 31, 2000.<sup>31</sup> The portfolio valuation was recalculated at the end of each year for the years 2000-2005 and at May 31, 2005. The portfolio value was also adjusted each period to take into consideration any stock splits during the five-year period of analysis. From the stock value data, Table 1 reports the rate of stock price appreciation or decline for each period and the cumulative rate of stock price appreciation or decline since May 31, 2000 for each period.

**Table 1**

Material Weakness Stock Portfolio		
Time Period	Rate of Stock Appreciation during Time Period	Cumulative Stock Appreciation Since May 31, 2000
June 1, 2000-December 31, 2000	-7.55%	-7.55%
Jan. 1, 2001-December 31, 2001	-9.38%	-16.23%
Jan. 1, 2002-December 31, 2002	-17.33%	-30.74%
Jan. 1, 2003-December 31, 2003	44.88%	-0.34%

<sup>31</sup> Bigcharts.com, "Historical Quotes," <http://bigcharts.marketwatch.com/historical/> (Accessed on July 21, 2005).

Jan. 1, 2004-December 31, 2004	12.91%	13.29%
Jan. 1, 2005-May 31, 2005	-2.74%	10.19%

### **BENCHMARK STOCK PRICE (RUSSELL 3000)**

The Russell 3000 was chosen as the benchmark for the analysis. It is a suitable benchmark when evaluating a portfolio which includes both large and small publicly traded companies. The Russell 3000 includes the 3000 largest U.S. common stock comprising approximately 98% of the U.S. equity market.<sup>32</sup> The material weakness portfolio includes companies with market capitalization ranging from \$40 million to in excess of \$300 billion. The average market capitalization for the Russell 3000 is approximately \$4.8 billion and its median market capitalization is approximately \$944.7 million.<sup>33</sup> At May 31, 2005, the portfolio's average market capitalization was \$4.852 billion and the median market capitalization was \$733 million. From the Russell 3000 data, Table 2 depicts the rate of stock price appreciation or decline for each period and the cumulative rate of stock price appreciation or decline since May 31, 2000 calculated consistently with the methodology used in Table 1.

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<sup>32</sup> Russell.com, "U.S. Indexes: Construction & Methodology," <http://www.russell.com/us/indexes/us/methodology.asp> (Accessed on July 29, 2005).

<sup>33</sup> Russell.com, "Index Fact Sheet," <http://www.russell.com/US/Indexes/US/3000.asp> (Accessed on July 29, 2005).

**Table 2**

Russell 3000		
Time Period	Rate of Stock Appreciation during Time Period	Cumulative Stock Appreciation Since May 31, 2000
June 1, 2000-December 31, 2000	-6.24%	-6.24%
Jan. 1, 2001-December 31, 2001	-12.63%	-18.08%
Jan. 1, 2002-December 31, 2002	-22.81%	-36.77%
Jan. 1, 2003-December 31, 2003	28.74%	-18.60%
Jan. 1, 2004-December 31, 2004	10.08%	-10.40%
Jan. 1, 2005-May 31, 2005	-1.41%	-11.66%

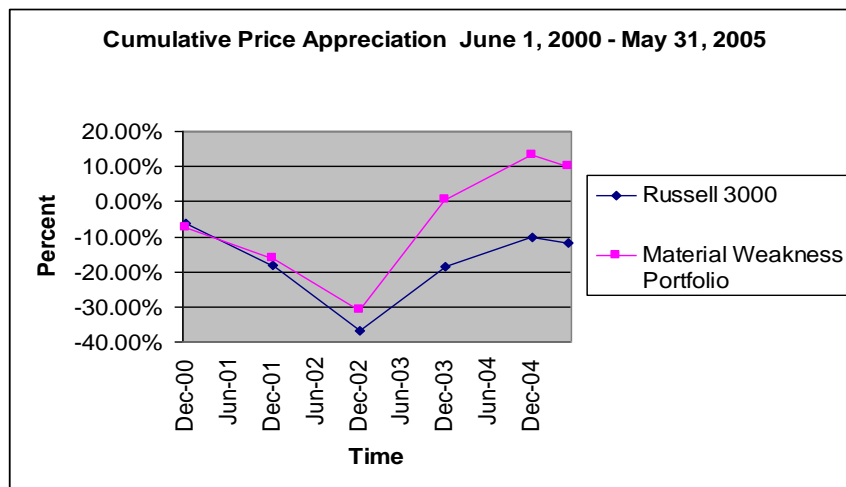
### **ANALYSIS OF RUSSELL 3000 VS. THE MATERIAL WEAKNESS PORTFOLIO**

As shown in Chart 1, the overall stock market and the material weakness portfolio closely followed the same downward trend for the periods between June 1, 2000 and December 31, 2002. The largest difference in portfolio returns occurred in 2003, when the material weakness portfolio gained 44.88% while the Russell 3000 gained 28.74%. In 2004, the last calendar year before annual report disclosure of material weaknesses, the material weakness portfolio outperformed the Russell by only 2.83%.

Annual reports of portfolio companies disclosing material weaknesses were filed in the first five months of 2005. The first annual report disclosure of a material weakness in 2005 by a portfolio company occurred on February 25. The final material weakness was disclosed on May 31. Tables 1 and 2 illustrate that for the first five months of 2005 (the periods of disclosure), the Russell 3000 outperformed the material weakness portfolio by

1.33%. This modest difference is not the expected punishment predicted by some in their analysis of the market's reaction.<sup>34</sup> However, it is the logical reaction if the market had already identified the companies with material weaknesses in internal control (again, consistent with the semi-strong efficient market hypothesis) and reacted prior to annual report disclosure. (The material weakness portfolio, because of its higher beta, would normally be expected to slightly outperform the Russell 3000. However given the short period of comparison (five months), the material weakness portfolio outperformance was not anticipated to be significant.)

**Chart 1**



### **ANALYSIS OF THE STOCK MARKET REACTION**

Why did the material weakness portfolio fail to dramatically under-perform the Russell 3000 during the period immediately following the annual report disclosure? The two most obvious possible rationales are:

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<sup>34</sup> Leone.

- 1) The stock market does not care about disclosures of material weakness in internal control.
- 2) The market cares, but the stock prices of companies disclosing material weaknesses already reflects information about the material weakness prior to the annual report public disclosure.

The first possible explanation, that the market does not care, could not be supported by other data or research and was dismissed. The second possible explanation, that stock prices already reflect information on the material weaknesses, is supported by the semi-strong efficient market hypothesis and the expectation of the existence of material weakness information in the public domain prior to disclosure in the company's 10-K. As an example, Southern Union Gas Company is listed in the material weakness portfolio because its auditors could not express an opinion on the effectiveness of the company's internal control.<sup>35</sup> Southern Union was aware of its auditor's inability to express an opinion and disclosed this fact in a 2004 form 8-K, prior to annual report disclosure.<sup>36</sup> In addition to company disclosures, there are other non-authorized information sources (leaks) from sources such as corporate insiders, family members, friends, external accountants, outside lawyers, and vendors which may disclose information regarding material weaknesses.<sup>37</sup>

As such, the market does care and does react. This "care" is not manifested in a decrease in the company's stock price timed at the release of the annual report. The market's reaction is

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<sup>35</sup> Securities and Exchange Commission, "Annual Report of Southern Union Company," <http://edgar.sec.gov/Archives/edgar/data/203248/000020324805000042/southernunion10k.htm> (Accessed on July 21, 2005).

<sup>36</sup> Securities and Exchange Commission, "Form 8-K Current Report of Southern Union Company," Available at <http://www.sec.gov/Archives/edgar/data/203248/000020324804000667/0000203248-04-000667.txt> (Accessed on July 21, 2005)

<sup>37</sup> Martha Carter, Sattar Mansi, and David Reeb, "Quasi-private Information and Insider Trading," *Financial Analysts Journal* 59, No. 3 (May/June, 2003) 60.

evidenced by the increasing risk profile associated with the company's stock as measured by its beta coefficient.

### **IMPACT OF MATERIAL WEAKNESS IN INTERNAL CONTROL ON BETA COEFFICIENT**

Companies with material weaknesses in internal control should be viewed as riskier than companies without material weaknesses. The PCAOB linked material weakness in internal control to the likelihood of a material misstatement of a financial statement. (PCAOB 2004) Hence companies with material weaknesses, reflecting this risk, are expected to have higher beta coefficients than the market in general. This increase in beta will occur even without the specific annual report disclosure mandated by SOX, if the market incorporates the material weakness in the pre-announcement stock price.

To test this supposition we calculated the average beta coefficient for the material weakness portfolio at June 1, 2000, at the end of years 2000-2004 and at May 31, 2005.<sup>38</sup>

**Table 3**

Material Weakness Average Portfolio Beta	
Date Calculated	Amount
June 1, 2000	1.086
December 31, 2000	1.079
December 31, 2001	1.131
December 31, 2002	1.191
December 31, 2003	1.271
December 31, 2004	1.343
May 31, 2005	1.360

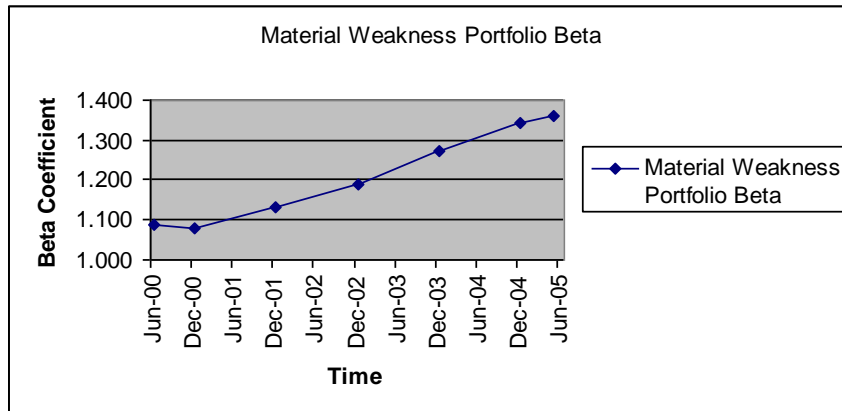
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<sup>38</sup> Research Insight. *Compustat*. New York, New York, The McGraw-Hill Companies, Inc.

### ANALYSIS OF PORTFOLIO BETA

Table 3 depicts the resulting portfolio betas. The average beta portfolio of a portfolio of 114 companies is expected to be one. The observed beta in our portfolio is slightly greater than one for the first two time periods (periods ending June 1, 2000 and December 31, 2000). It then steadily increases depicting a constant increase in systematic risk in the portfolio. See Chart 2. This portfolio's increase in beta is largely before company annual report disclosure of a material weakness in early 2005. Table 3 supports this paper's assertion that the market already incorporated information about weaknesses in internal control and reacted prior to 10-K disclosure.

Chart 2



### CONCLUSIONS

The interrelationship of material weaknesses in internal control, public disclosure, and the stock market's reaction is a developing matter. Further study is warranted, including follow-up analysis of current disclosing companies, analysis of companies with future disclosures, and study of costs and benefits of SOX.

Accounting literature and investors support the need for strong internal control. Recent legislative efforts have focused attention on internal control and require specific disclosures by those companies with material weaknesses in internal control. The

stock market does not wait for the company to disclose the material weakness before it reacts. Market reaction is as follows.

- 1) Consistent with the efficient market hypothesis in the semi-strong form, material weaknesses in internal control are reflected in a publicly traded company's stock price behavior.
- 2) Companies disclosing material weakness in internal control are considered riskier than the overall stock market. The level of risk, as measured by the beta coefficient, does not first occur when a material weakness is disclosed in an annual report. Rather beta steadily increases for periods prior to annual report disclosure.
- 3) Stock prices for companies disclosing material weakness in internal control do not dramatically under-perform the overall stock market immediately following annual report disclosure of the weakness.