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Independent Auditor's Opinions of Substantial Doubt: A Sox-2002 Markets Efficiency Evaluation

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INDEPENDENT AUDITOR'S OPINIONS OF SUBSTANTIAL DOUBT: A SOX-2002 MARKETS EFFICIENCY EVALUATION

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This study determined that cumulative abnormal stock returns of an auditor portfolio of firms with substantial doubt were positive but non-significant for a 23-event week period following the release of independent auditor opinions but transitioned to positive and significant for the remainder of the 35-event week window. The non-significant period supports the semi-strong form of the efficient markets hypothesis (EMH), which suggests that these opinions were quickly and efficiently absorbed by the firms' market value. The significant period anomaly violates the EMH and may suggest a lagged market response to an optimistic outlook of the market value of the auditor portfolio. This may also suggest a lagged positive market effect suggestive of future economic recovery. The impact for the practitioner is that, on average, when these firms are classified as having substantial doubt, their market values are more likely to recover, allowing them to remain as going concerns in the long run. The exception is a firm filing for bankruptcy during the event window.

Introduction

The motivation of this study is to determine the significance of the information content of independent auditor's opinions of substantial doubt (IAO-SD) for publicly traded firms. In light of recent corporate malfeasance and auditor oversight in evaluating the potential of a firm's future ability to remain as a going concern, the mandates of the Sarbanes-Oxley Act of 2002 (SOX-2002) is legislating the reporting requirements of corporate executives and the independent auditor to ensure ethical compliance. This legislation provides legal oversight and prosecutable powers to enforce the statute requirements of SOX-2002. Hence, there should be motivation on behalf of both executives and independent auditors to ensure credibility and trustworthiness of firm 10-K annual reports. In essence, this opinion of substantial doubt reflects a belief that the short term survivability of this firm is in question. If this state exists, then there should be a cumulative shock affect to an auditor portfolio of stock comprised of these firms with IAO-SDs that would adjust this portfolio to compensate for this new level of risk. The motivation of this study then is to determine how this new information affects the stock returns of this auditor portfolio.

A literature review follows that surveyed the effects of information on the stock market. In particular, the market adjustment to bad or good news is an investment concern. These IAO-SDs may contain bad or good information or this information may already be absorbed at the time of the release, as suggested by the semi-strong form of the EMH. If bad news is released, then one can expect negative abnormal returns (ARs) surrounding the event; if good news, then positive ARs; neither positive nor negative news, then no ARs should occur. This study will consider these questions in determining the effects of this auditor portfolio comprised of these firms with IAO-SD.

LITERATURE REVIEW

Fama (1971) suggested that the theory of efficient markets is concerned with determining if prices at any point in time fully reflect available information. He found that information contained in stock splits concerning firm dividend payments were, on average, fully reflected in the price of a split share at the time of the split. He continued and suggested that security price adjustments in an efficient capital market could be evaluated using three tests of information forms efficiency: (1) weak, (2) semi-strong, (3) and strong form tests. Weak form tests are used when the information is historical price returns, semi-strong form tests are used when evaluating other forms of publicly available information, and strong form tests are used to evaluate the information of institutional investors and groups with monopolistic access to any information relevant for price information. This study's concern is the evaluation of the release of public information, in the form of IAO-SD. Following Fama (1971), I will test the semi-strong form efficiency to determine if prices efficiently adjust to this type of risk information using the cumulative abnormal return (CAR) methodology. Larcker, Gordon, and Pinches (1980) employed the use of CARs to test for market efficiency to estimate the parameters of a market model based on data in a time period prior to an announcement. They analyzed the residuals derived from applying the market model to a time period that included the announcement date. Their

motivation was to suggest an intervention requirement to mitigate the effects of auto-regression in deciding CARs, which test the semi-strong form of the EMH.

Literature review regarding Fama's (1971) EMH and CARs. These topics include evaluations of announcement periods and stock returns following equity issues, initial ratings of new issues of commercial paper, the effects of forced bond conversions to stock or to cash on stock prices, negative shock effects, anti-trust suit filings, forecasts of future earnings, the psychology of investors, information asymmetry, and trading halts by the Securities and Exchange Commission (SEC). An author summary follows.

Jain (1992) presented an argument for the explanation for negative ARs around equity issue announcements. He found that equity issues conveyed information about firms' future earnings and that these forecasts revised by financial analysts subsequent to the announcement of equity issues were positive and significantly related to announcement period ARs. Manuel, Brooks, and Schadler (1993) evaluated bad news and found that the earlier a security issue announcement, the greater its negative value effect. They found that most managers were likely to announce an equity issue before a dividend decline. The AR differences indicated that investors discounted the stock price more heavily when the equity issue announcement preceded the dividend release. Nayer and Rozeff (1994) found when evaluating commercial paper ratings that: (1) initial ratings influenced common stock returns and (2) rating downgrades, especially those that implied an exit from the commercial paper market produced significantly negative ARs. Jaffee and Schleifer (1990) found that the risk of forced bond conversions (to stock or cash) created a cost of financial stress for the firm when this conversion failed due to stock price decreases during the notice period. This resulted in stock price declines during these failed conversion periods. Engle and Ng (1993) found that negative shocks introduced more volatility than positive shocks and Garbadeth, Silber, and White (1982) found that the price of a stock significantly moved in a negative direction within four days in response to the filing of an anti-trust suit. Brous (1992) found that forecasts of future earnings around announcements of common stock offerings of the current year earnings decreased when firms announced plans to issue additional common stock. Hirshleifer's (2001) psychology based asset pricing theory found that upon the psychology of investors, security expected returns were determined by both risk and misevaluation. This postulated that for both risk aversion and multiple risky securities, pricing models based on loss- and disappointment-aversion could be viewed as reflecting concern about future feelings. Dierkens (1991) suggested that information symmetry was a significant variable for equity issues that increases in information asymmetry increased the drop in prices observed at an equity issue announcement. Howe and Schlarbaum (1986) found when corporate security trading was temporarily suspended by the SEC, this coincided with substantial devaluations of the suspended securities in which significant and prolonged negative ARs were observed in the post suspension period.

The results of the literature review clearly suggest that the evaluation of IAO-SDs using CARs is within the boundaries of Fama's (1971) EMH and I intend to expand this body of knowledge by evaluating the CARs of an auditor portfolio of firms with IAO-SD surrounding the release of these opinions. The intent of this study is to determine the effects of the information content of these IAO-SDs on the short run firm market value subsequent to these announcements.

DATA AND METHODOLOGY

A historical evaluation of the stock returns of an auditor portfolio consisting of firms with IAO-SD can determine if the market is influenced by the information contained within these opinions. This study is exploratory and deterministic in identifying the information content and the effects on the market value of this auditor portfolio. I will evaluate the differences between forecasted stock returns and actual market returns of this portfolio of firms consisting of IAO-SD to determine an event window of ARs. To answer this research question, I will evaluate returns from this event window as being significant and positive or negative using the CARs methodology. This will test Fama's semi-strong form of the EMH. This form suggests an efficient and timely adjustment period to this type of market information.

Cumulative Abnormal Return Evaluation

To answer this study's research question, an evaluation of aggregated weekly CARs surrounding each event's announcement week would determine the market's reaction to this information. This would be statistically constructed by identifying an event window surrounding the release of the IAO-SD that would consist of an estimation and cumulation period. These periods would be equal in length using a 7-day week unit of measurement. (The 7-day week would begin on Monday and end on Sunday with returns averaged from Monday through Friday, excluding holidays.) The

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estimation period would begin prior to the event week and end short of the announcement week. The cumulation period would follow and include the announcement week to allow for information leakage evaluation. Respective stock returns surrounding each IAO-SD event would then establish the auditor portfolio ARs.

To determine CARs, a market model would forecast stock returns for the cumulation period by using joint estimation period and market model returns. This forecast would be determined by regressing a market index on the stock returns and the ARs would be computed as the difference from the actual returns and the forecasted returns for each event week in the cumulation period. These ARs would determine instances of ARs for each time period. They would be summed across each event week, per time period, and then averaged and cumulated sequentially across each event week to compute the CARs. These CARs would then be evaluated for each weekly event to determine ARs significantly different from zero. If significant returns exist, then an assertion would be made that IAO-SD contains information content that would alter firm market value.

Methodology

From this, the goal is to estimate the residual errors, ε_{it}, during the cumulation period for each weekly event period R_{it} in the cumulation period using the classical market model from equation 1.

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \qquad (1)$$

where α_i and β_i are fitted from the weekly evaluation period to estimate the weekly cumulation period events. The ARs are estimated from equation (2).

$$AR_{it} = R_{it} - (\alpha_i + \beta_i R_{mt}), \text{ for } T = t_1 \text{ to } t_2 \qquad (2)$$

where $\varepsilon_{it} = AR_{it}$, t_1 is the beginning and t_2 is the ending event week of the cumulation period. The natural logarithmic returns are computed as cumulative returns, $Ln\ (t_i / t_i - 1)$, for $i = 1, 2, \ldots, n$, for the period T. The CARs for the auditor portfolio R_{it} is estimated from equation (3).

$$CAR_t = \frac{1}{N} \sum_{i=1}^{N} \sum_{t=t_1}^{t_2} AR_{it} \qquad (3)$$

where t_1 is the beginning event week and t_2 is the ending event week in the cumulation period, N is the number of firms in the auditor portfolio, and AR_{it} are the ARs for each firm for each time period across the auditor portfolio. The row vector average ARs for each N firm in the auditor portfolio are cumulated from t_1 to t_2 and the CARs are then derived from aggregating across each i firm in the auditor portfolio for each instant t time. These averages are then aggregated for each time period t from t_1 to t_2 establish each t time period CAR.

Statistical tests are based on the z-statistics corrected for serial dependence as in Makkelson and Partch (1998) and Liang (1999), as shown in equations (4) and (5). They suggest that serial correlations occur due to ARs being functions of the same market model intercept and slope estimators.

$$Z(CAR) = \frac{1}{\sqrt{N}} \sum_{i=1}^{N} \left[\frac{\sum_{t=t_1}^{t_2} AR_{it}}{\sqrt{Var \sum_{t=t_1}^{t_2} AR_{it}}} \right], \text{ where} \qquad (4)$$

$$Var\left(\sum_{t_1}^{t_2} AR_{it}\right) = \sigma_i^2 \left[T + \frac{T^2}{ED} + \frac{\left(\sum_{t=t_1}^{t_2} R_{mt} - T\left(\overline{R}_m\right)\right)^2}{EDVar\left(R_m\right)} \right], \text{ where} \qquad (5)$$

σ_i^2 is the variance of ε_{it} in equation (1), R_{mt} and $Var\ (R_m)$ are the mean and variance of the market over the estimation period event window of length ED, t_1 and t_2 are the first and last week of the cumulation period, and $T = t_2 - t_1 + 1$ (Liang, 1999).

The test statistic, equation (6), was used in determining significance ARs is borrowed from Salinger, M. (1992). Since α and β are estimated by OLS, the variance of a single AR is computed from equation (6).

$$Var(AR_t) = \sigma^2\left[1 + \frac{1}{ED} + \frac{(R_{mt} - \overline{R}_m)^2}{EDVar(R_m)}\right], \text{ where} \qquad (6)$$

σ^2 is the variance of ε_t in equation (1), and $\overline{R}_m$ and $Var(R_m)$ are the mean and variance of the market return over the estimation period of length ED.

RESULTS

Data Gathering Results

A search of the SEC website (www.sec.gov) database of 10-K annual reports was conducted to identify U.S. going concerns with IAO-SD that were traded on the NYSE and NASDAQ market exchanges (to ensure adequate volume and stock price movements at the time of evaluation). I inspected firms from calendar years December 2002 through December 2005. Firms that had entered into bankruptcy protection under Chapter 7 or 11 were omitted from the sample. Also, firms that paid dividends during the evaluation period were not selected. In addition, only the first instance of IAO-SD was evaluated. There were multiple firms with sequential IAO-SDs. Following this search, I selected 32 firms for evaluation from a population of 80. Of these 80 firms, 47 were not selected; 18 firms did not have evaluation period stock data due to recent IAO-SD, and of these, two paid dividends; 28 had IAO-SD in calendar year 2001; and one was of foreign origin. These firms are reported in Appendix A. Note only the parent company was considered, and IAO-SD's of subsidiaries were not included for evaluation. These firms are listed on www.EyePredictor.com's EyePress. To determine ARs, I regressed the S&P 500 index returns on each firm's estimation period to predicted returns during the cumulation period using the same time periods. The estimation period began at week t - 39 and ended at week t - 5 and the cumulation period began at week t - 4 and ended at week t + 30, which included the event week, t = 0.

Abnormal and Cumulative Abnormal Return

Appendix A reports ARs and CARs around the announcement week and during the cumulation period with significant z-values. Figures 2 and 3 report 35 overlapping 1-week time periods surrounding the event weeks from January 2003 through October 2004. Event week 1 corresponds to t - 4, event week 5 corresponds to t = 0, and event week 35 corresponds to t + 30. The release of the auditor opinion of substantial doubt is event week 5 (t = 0). The event window begins at event week 1 to allow for possible news event leaks prior to the announcement date at event week 5. The z-statistics are corrected for serial correlation according to Liang (1999) and Mikkelson and Partch (1988).

The Impact of Abnormal Returns. Figure 2, Abnormal Returns, presents ARs calculated from the market model in which betas and alphas are estimated during a 35-event week estimation period. The event window begins with a non-significant negative AR at event week 1, they shift to positive at event week 2 and remain so through event week 4, they shift to negative for event weeks 5 and 6, they shift to positive for event weeks 7-21, they shift to negative at event week 22, they shift to positive for event weeks 23-26, they shift to negative at event week 27, they shift to significant (z = 2.564) and positive at event week 28, they shift to non-significant from event weeks 29-34, and finally they shift to negative at event week 35. The ARs and z-statistics are reported in Appendix B.

The Impact of Cumulative Abnormal Returns. Figure 3, Cumulative Abnormal Returns, presents the CARs for the cumulation period consisting of the 35 event weeks ARs. The event window begins with non-significant negative CARs for event weeks 1 and 2, they shift to positive from event weeks 3-27, they shift to significant and positive from event weeks 28-35, with the largest significance level occurring at event week 34 (z = 3.019). The CARs and z-statistics are reported in Appendix B.

Findings of the study. We see that prior to the announcement week, there are no significant ARs or CARs, which would suggest that the information contained in the release of these IAO-SD at t = 0 has already been absorbed in the market value of the auditor portfolio firms and no information leakage occurred. At this event week, The AR has a small decrease in value (-0.005%) and the CARs had a small increase in value (0.002%), both non-significant. From event weeks 1 -

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27, there are no significant ARs or CARs. At event week 28, both the AR and the CAR are positive and significant and the CARs remain significant for the remainder of the cumulation period but decrease in value at event week 35. At event week 8, this AR experiences a 2.56% single day increase and the CAR a 1.98% increase in value. This is the only time that both the AR and CARs are significant and positive. Following event week 28, the ARs are not significant and alternate between positive and negative values and the CARs remain positive and significant through event week 30 reaching their highest increase of 3.02%.

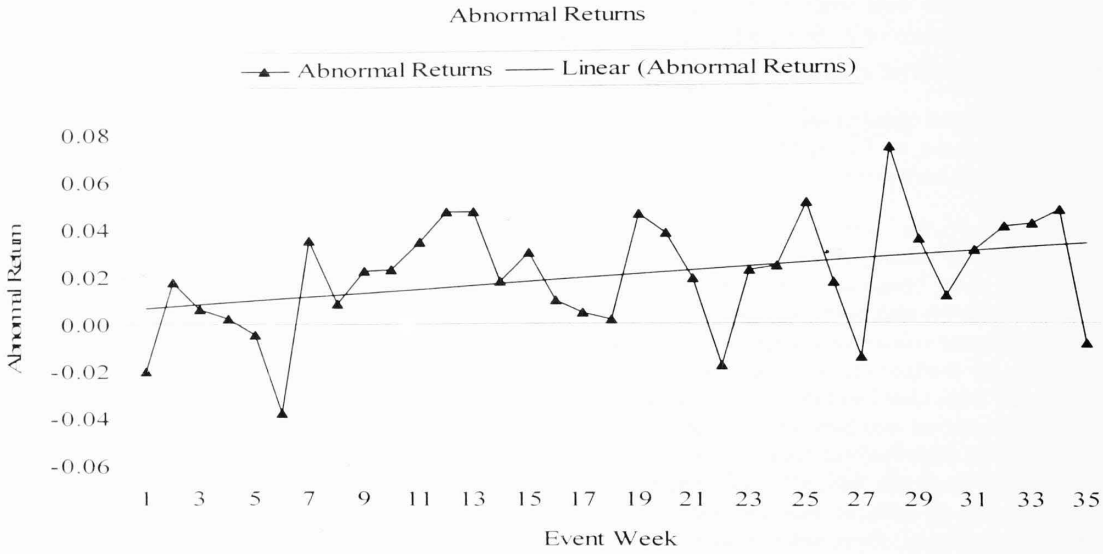

Figure 2. Abnormal Return. This presents ARs calculated from the market model in which betas and alphas are estimated during a 35-week estimation. The ARs and z-statistics are reported in Appendix B. The trend line (Linear (Abnormal Returns)) shows a positive slope.

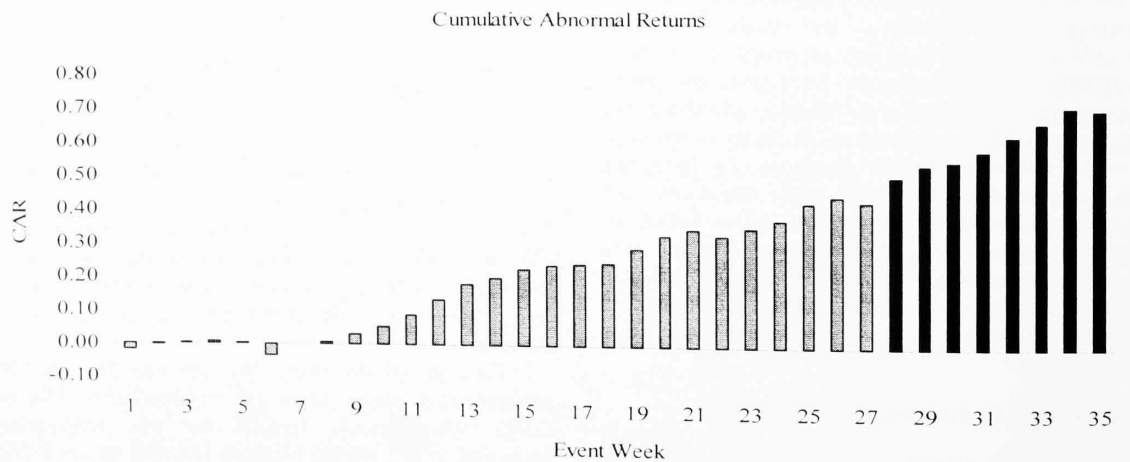

Figure 3. Cumulative Abnormal Returns (CAR). This presents the CARs for the cumulation event window consisting of the 35 event weeks. The CARs and z-statistics are reported in Appendix B.

CONCLUSIONS

The motivation of this study was to determine the impact of the information content contained in the IAO-SD of an auditor portfolio. The intent was to determine if this information would increase, decrease, or hold constant the market value of these firm's in terms of the EMH. I surveyed the literature and reviewed the research that had extended Fama's EMH, which grounded this study. In light of recent corporate malfeasance and auditor oversight in evaluating a firm's future ability to remain as a going concern, the mandates of the SOX-2002 in legislating the reporting requirements of corporate executives and independent auditors should give credibility to the IAO-SD. Furthermore, the impact of SOX-2002 in this regard should instill investor confidence in these opinions. Forthwith, there should be a market response to this new information, as evaluated by the adjustment of these firms' market value surrounding the release of this new information. Presumably, it is more plausible that these firms' market value would depreciate surrounding these announcements.

The findings of this study is that the market value did not depreciate surrounding these events but remained statistically non-significant, as evaluated by the ARs and CARs, until event week 28. At event week 28, for both the AR and CARs became positive and statistically significant, suggesting a latent market response to the information contained in the cumulative effects of the CARs. The opinion of the independent auditor failed to contain any credible information content surrounding these events. An anomaly occurred at event week 28 where both the AR and CARs became positive and significant. This may suggest that the classification of these firms as having substantial doubt as to their ability to remain as going concerns may have prompted firm value increase measures internal to these firms to prevent market value decline. This suggests that a latent effect may have increased the market values of this auditor portfolio.

Implications to Practitioners

Firms that have IAO-SD may be good investments in the long run. These firms seem to have avoided market value deterioration, as evident through the increase in market value at event week 28. The empirical results of this study suggest that the longer these firms with IAO-SD remain as a going concern, the greater the likelihood they will experience an economic turnaround. Caution should be taken due to a limitation of this study. Only going concerns were selected for evaluation and not firms that had filed for bankruptcy.

Future Study Extensions

An evaluation of bankrupt firms with IAO-SDs would determine if negative ARs exists surrounding the event week. If they exist, then they could be compared with this study's firms' to suggest a classification tool for the independent auditor to use to determine which firms are more likely to lose market value and file for bankruptcy. As suggested in Grover and Lavin (2005), the independent auditor ability to classify firms as going bankrupt in the short run is statistically greater than chance occurrences of these selections. It follows that there may be statistical differences between the centroids of these two populations. If so, then discrimination of these two populations would extend this stream of literature and provide the independent auditor with a classification tool to use when evaluating firm's as having substantial doubt as to their ability to remain as going concerns. The findings of this study suggest that unless there are additional information effects in the market, firms with IAO-SD are not likely to contain ARs in the short run. Determining the likelihood of bankruptcy filing may cause negative ARs surrounding these events that could signal these filing. If so, then the IAO-SD may have greater investor and practitioner utility.

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