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SEC Comment Letters: An Unlikely Secret Weapon for Forensic Accountants, Short Sellers, and Other Financial Statement Users

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I. Introduction

This article examines the information content in the comment letters questioning firm financial statements as issued by the Securities and Exchange Commission (SEC). The information value of the SEC's Accounting and Auditing Enforcement Releases (AAER's) has been documented in the academic literature.[1] The AAER's typically take two years to complete, and current financial market studies have not considered the more timely information contained in SEC comment letters. If financial markets compound the information value of AAERs, then SEC comment letters should have a similar and perhaps more immediate and dramatic impact on prices. With this motivation, we examine the information value of SEC letters that question financial statements. We view comment letters as a source of independent expert opinion of the quality of financial reporting, similar to a forensic analysis. We expect the information in SEC comment letters will alert auditors, investors, and other external users to potential financial reporting problems contained in a firm's financial statements.

Between 2005 and 2013, as required by the Securities Act of 1933 and the Securities Exchange Act of 1934, the SEC issued over 14,000 comment letters and associated correspondence on the registration statements and reports filed by corporations. Specifically, comment letters are correspondences issued by the staff of the Division of Corporation Finance and Investment Management (DCF) within the SEC that focus on questions the staff have about disclosures contained in a firm's financial statements. Although the DCF does not evaluate the merits of any transaction nor does it determine whether an investment is appropriate for an investor, DCF staff do bring considerable industry, accounting, and disclosure expertise in the context of an independent review process.

As required by the Sarbanes-Oxley Act of 2002, the DCF does some level of review of each reporting company at least once every three years and reviews a significant number of companies more frequently than three years. To preserve the integrity of this selective review process, the DCF does not publicly disclose the selection criteria it uses to identify questionable financial statements. Its processes and methodologies remain nontransparent and indistinct. Interestingly, in 2013, the DCF started an Accounting Quality Model program, with the objective of further developing these selection criteria which was subsequently nicknamed the "SEC RoboCop" by the financial press.

The DCF performs its primary review responsibilities through twelve offices staffed with twenty-five to thirty-five professionals (primarily accountants and lawyers). These professionals have specialized industry, accounting, and disclosure expertise. Each office has an Assistant Director, a Senior Assistant Chief Accountant, two Accounting Branch Chiefs, and a Legal Branch Chief. An Associate Director oversees each Assistant Director's Office and the Deputy Director and the Director oversee the entire

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[1] See Beneish (1999) and Dechow, Ge, Larson, and Sloan (2007).

filing review process. The DCF assigns filings by companies in a particular industry to one of the twelve offices which are organized by the following primary industry responsibilities: healthcare and insurance, consumer products, information technologies and services, natural resources, transportation and leisure, manufacturing and construction, financial services I and II, real estate and commodities, beverages, apparel, and mining, electronics and machinery, and telecommunications (SEC, 2014). Thus, this entire comment letter process enables the DCF staff to be highly specialized in reviewing these specific industries and related company businesses and their comment letter analyses could be more valuable as independent experts than regular auditing reports or reports from other types of "ad hoc" reviewers.

The letters can be extracted directly from the SEC website or from the SEC's EDGAR database. At the website, the term "comment letters" are described as 'letters that individuals and various other entities submit as responses to requests for public comment on SEC rule proposals or concept releases. However, a second and more compelling type of comment letter can be found in the SEC's EDGAR database. These letters reflect the staff's understanding and opinions of the facts, the circumstances and the financial practices as expressed in a firm's official filings. The SEC began publicly releasing this correspondence in 2005 for filings that are reviewed by the SEC staff after August 1, 2004. The staff of the DCF has published and continue to post this type of comment letter in connection with internal reviews of a firm's disclosure filings in the context of other public information about the firm, to the present time.

In addition to requiring that the SEC review each firm's periodic reports at least once every three years, the Sarbanes-Oxley Act also specifies that the SEC consider market capitalization, financial restatements, volatility of the firm's stock price, and the P/E ratio, when scheduling the timing of reviews. Targeted reviews are also scheduled for certain types of filings including, for example, 8-K Forms reporting a change in auditors, a resignation of a director, a material acquisition, or any filing that reports a financial restatement. Although many reviews of filings occur, the vast majority are completed without a comment letter being issued. However, when areas are identified for a specific firm that represent an opportunity for improved compliance with disclosure requirements as well as compliance with GAAP, then a letter is issued that outlines the staff's concerns and questions.

Public company filings with the SEC may receive comment letters for a variety of reasons including and depending on the SEC's current focus on certain issues, the firm's history of past issuances, the duration since the last time a company received a letter, and the complexity of the specific registration offering and disclosure. When a letter is received, the firm is required to respond to the identified concerns within 10 days of the issuance of the letter. Currently, the SEC publishes all comment letter correspondence to the public, no later than twenty business days after the initial review is issued. Prior to January, 2012, that deadline was much longer as it extended to forty-five days.

A number of issues or requests, designed to improve the staff's understanding of a firm's filing, may be contained in the issued letters. The letter is likely to contain a request for a revision of or supplemental information regarding a disclosure currently on file with the SEC. Multiple rounds of correspondence between the SEC staff and the firm may occur before the issues identified in the specific filing are resolved. Taken from an investor's perspective, all such correspondence is to be accurately interpreted as representations of SEC staff *positions*, and not official SEC regulatory *rulings*. Herein, lies the value of attending to not only the sheer issuance, but also the type of the comment letter and the type of questions being raised by SEC staff.

This study has four major findings. First, as one might expect, the information content in comment letters is indeed correlated with the level of a firm's financial distress. We document that a sample of firms receiving a comment letter (hereafter referred to as "questioned" firms) exhibited higher scores on traditional "red-flag" forensic metrics that indicate distress when compared to a control sample of "unquestioned" firms. Second, questioned firms underperformed a control group of unquestioned firms by a factor consistent with the number of financial distress indicators exhibited. We also document the

pattern of underperformance of the questioned firms persists for a considerable period of time following the publication date of the letter.

Third, the magnitude of scores on the red-flag forensic metrics is positively related to the price performance for all firms, but especially for those questioned by the SEC. Questioned firms with high scores on red-flag metrics underperform the market, while the questioned firms with lower scores on red-flag metrics do not. Finally, the duration of the underperformance for questioned firms last approximately three quarters. The questioned firms with high red-flag metrics experience a downward drift lasting for more than nine months after questioning by the SEC, but the questioned firms with stronger financial metrics do not.

The rest of the paper is organized as follows. In Section II, we present a short literature review. In Section III, we describe our specific hypotheses and methodology. In Section IV, we describe the data collected from SEC comment letters. In Section V, we discuss our results along with the robustness checks, and in Section VI, we conclude and discuss limitations.

II. Literature Review

The academic literature regarding comment letters is exceedingly limited. An exhaustive search of the literature produced few relevant articles. The articles that have been published are primarily focused on the monitoring role of the SEC and the benefits and drawbacks of the comment letter review and oversight process. Gietzman and Isidro (2013) investigate the impact of comment letters on the holdings of institutional investors. They find equity holdings are reduced when a comment letter is received for a firm, especially if the letter questions the application of International Financial Reporting Standards when compared to those that question U.S. Generally Accepted Accounting Principles. Dechow, Lawrence, and Ryan (2013) document increases in insider sales prior to and following the publication of the issuance of comment letters. They argue investor interests are better served by the SEC as the duration of the delay of publication of issuance is reduced. Gao, Lawrence, and Smith (2010) provide evidence that the SEC comment letter review and monitoring would serve as the model for achieving IFRS enforcement. Ertimur and Nondorf (2008) found that SEC comment letters did not affect the quality of disclosure for 95 firms in their 2004-2005 initial public offerings.

III. Hypotheses and Methodology

We begin with analyzing the information content in SEC comment letters and its correlation to a series of models that indicate "red-flag" problem firms. Similar to Grove (et al., 2010), we use red-flag forensic metrics to gauge financial weakness. These red-flag metrics included five widely recognized models that screen for and identify financial reporting problems in publicly held companies. The five red-flag forensic measures are: 1) a Quality of Revenue model; 2) the Sloan Accrual model; 3) the Altman Z-Score model; 4) the Beneish Model; and 5) the F-Score model.

The Altman Z-Score model is a well-established bankruptcy prediction model (Altman 1968; Altman and Hotchkiss 2005). The Beneish Model (1999) was designed and constructed as a fraud prediction model based upon SEC investigations of companies over a ten-year time period from 1982 to 1992. The Quality of Revenue model (Schilit and Perler 2010) and Sloan Accrual model (Robinson 2007) compare financial accounting accrual measures to actual cash flows generated by companies. The F-Score model (Dechow et al., 2007) is the most comprehensive fraud prediction model in the literature. The specification of each forensic model and the red-flag scoring used in this research is presented in Exhibit 1.

Exhibit 1: Specification of the Five Models Used to Construct the Red-Flag Metric

1) Quality of Revenues = Cash Collected (Revenues – Acc. Rec. Increase) / Revenues
   Red-flag Benchmark: 1.00
   Usage: If Quality of Revenues is less than 1.00, we assign score 1 to the firm, 0 otherwise.

2) Sloan Accrual = NI – (Free Cash Flow = OCF – Capex) / Average Total Assets
Red-flag Benchmark: 0.10
Usage: If Sloan Accrual is greater than 0.10, we assign score 1 to the firm, 0 otherwise.

3) Altman Z-Score = 1.2 (Working Capital / TA) + 1.4 (Retained Earnings / TA) + 3.3 (EBIT / TA) + 0.6 (Market Cap / TL) + 0.999 (Sales / TA)
Red-flag Benchmark: 1.80
Usage: If Altman Z-Score is less than 1.80, we assign score 1 to the firm, 0 otherwise.

4) Beneish Score = -4.840 + 0.920 (Days Sales Receivable Index) + 0.528 (Gross Margin Index) + 0.404 (Asset Quality Index) + 0.892 (Sales Growth Index) + 4.679 (Total Accruals / Total Assets)
Red-flag Benchmark: -1.49
Usage: If Beneish Score is greater than -1.49, we assign score 1 to the firm, 0 otherwise.

5) F-Score Model = -6.753 + 0.773 (Accruals) + 3.201 (Change in AR) + 2.465 (Change in Inventory) + 0.108 (Change in Cash Sales) – 0.995 (Change in Net Income) + 0.938 (Issuance of Securities)
Red-flag Benchmark: 1.00
Usage: If F-Score is greater than 1.00, we assign score 1 to the firm, 0 otherwise.

The five models capture different pieces of information, and they are not closely related. Therefore, we combine the scores into a single red-flag forensic metric by adding the scores from each of the five models. The red-flag metric varies from 0 (the least financial distress) to 5 (the highest level of financial distress) for each firm. We then develop several hypotheses.

Hypothesis 1. The information content in SEC comment letters

If SEC comment letters are a warning signal for financial distress, the questioned firms should have higher red-flag metrics than a control sample of the firms that are not questioned by SEC. Thus, the first hypothesis states:

Hypothesis 1: The average of the red-flag metrics of questioned firms is greater than that of unquestioned firms.

We use a PROBIT regression to test this hypothesis. The PROBIT model is:

$$(1)\quad p = \Pr ob(Y = 0) = C + (1 - C) \times \Phi(\alpha + \beta \cdot \mathrm{Re}\, d\_Flag\_Metric).$$

In this model, Y=1 for the questioned firms and 0, otherwise. Φ is the cumulative normal distribution function, and C is the natural response rate. The PROBIT procedure computes maximum likelihood estimates of the parameters C, α, and β of the PROBIT equation using a modified Newton-Raphson algorithm. A significant and positive β indicates that there is information content in the comment letter.

Hypothesis 2. The stock market performance of questioned firms

After analyzing the information content of the SEC comment letters, we investigate the valuation of the questioned firms. If the questioned companies have the tendency to inflate their financial reports, they should be relatively more overvalued than other firms. Our second hypothesis states:

Hypothesis 2: The questioned firms tend to manipulate financial reports resulting in higher mispricing components in stock prices. The mispricing increases with the level of financial distress.

We estimate the mispricing components using the dynamic valuation framework of Vuolteenaho (2002). The model is specified as:

$$(2)\quad m_t - b_t = c + \sum_{\tau=1}^{\infty} \rho^{\tau-1} \mathrm{E}_t(ROE_{t+\tau}) - \sum_{\tau=1}^{\infty} \rho^{\tau-1} \mathrm{E}_t(r_{t+\tau}),$$

where m_t is the log of the market value for a stock and b_t is the log of the book value. We calculate the book value as the sum of common equity, deferred tax, and tax payable. c is a constant estimated as $c = k/(1-\rho)$, where $\rho = 1/(1+e^{\bar{d}-\bar{p}})$, $\bar{d}-\bar{p}$ is the average log dividend-price ratio for the period, and $k = -\log(\rho) - (1-\rho)\cdot\log(1/\rho - 1)$.[2] In Equation (2), r_t is the excess stock return defined as log return of the stock minus the risk-free rate, E_t is the expectations operator, E_t is the conditional expectations calculated using the estimated Vector Auto regression (*VAR*) parameters, and $ROE_t = \log(1 + NetIncome_t / BookValue_t) - f_t$, where f_t is the risk-free rate.

Following the extant literature, we relax the objective expectations assumption and consider the possibility that some investors use subjective expectations. We decompose the observed log market-to-book value ratio into:

$$(3)\quad \hat{m} - \hat{b} = m_t - b_t + \hat{\varepsilon}_t = c + \sum_{\tau=1}^{\infty} \rho^{\tau-1} \mathrm{E}_t(ROE_{t+\tau}) - \sum_{\tau=1}^{\infty} \rho^{\tau-1} \mathrm{E}_t(r_{t+\tau}) + \hat{\varepsilon}_t.$$

The mispricing term, $\hat{\varepsilon}_t$, is the difference between the observed and fundamental log market-to-book value ratio, which is consistent with the mispricing calculation in the literature.

To obtain the stock mispricing in Equation (3) we estimate a *VAR* model. We define χ_t as a 3×1 vector for the three variables at time *t* as $\chi_t = (MB_t, ROE_t, r_t)'$, where MB_t is the observed log of market-to-book value ratio. Our test model is stated as:

$$(4)\quad \tilde{\varepsilon}_i = \alpha + \beta \times Dummy + \theta \times METRIC_i + \eta \times Dummy \times METRIC_i + e_i.$$

In this model, *Dummy* is 1 for the questioned firms, 0 otherwise. A positive value of β indicates that the questioned firms have a higher mispricing component than normal firms. If comment letters contain the information about the financial distress, β should be significant. We also include the red-flag *METRIC* to control the effect of the relationship between mispricing and the degree of financial distress in Equation (4). A positive and significant value of θ suggests that mispricing increases in the degree of financial troubles. The interaction term, *Dummy*×*METRIC*, captures the impact of financial strength on the mispricing of the questioned firms when compared to normal firms. A positive and significant value of η will provide evidence that financial distress has a greater impact on the valuation of the questioned firms.

Hypothesis 3. The degree of financial distress and stock market performance

If the market overlooks the warning signal from the SEC and fails to fully react to it promptly, the questioned firms should experience a downward drift after the SEC issues comment letters to them. The magnitude of the downward drift should increase as the number of indicators of financial distress also increases. Our third hypothesis states:

[2] As discussed in Vuolteenaho (2002), the value of ρ is an empirical question. We maintain a constant value of 0.95 for all the stocks. By varying the value from 0.90 to 0.99, we find that our test results are not sensitive to ρ, which is consistent with the conclusion in Vuolteenaho (2002).

Hypothesis 3: If the market underreacts to the comment letter, the questioned firms should experience a downward drift post-issuance. The magnitude of the drift should increase in the red-flag metric.

As the SEC releases comment letters that question firms' financial reports, and if investors pay sufficient attention to the news, the stock prices of the questioned firms should drop quickly and exhibit no trace of drift. We conduct a market-reaction test based on cumulative abnormal returns (*CAR*) calculated in a standard event study procedure (see, for example, Mikkelson and Partch [1988]). We begin with a benchmark return, and then we define the daily abnormal return in the event window as the difference between the actual return and the benchmark return. We use the four-factor model to generate benchmark returns:

$$(5)\quad R_{i,t}=\alpha_i + \beta_m R_{m,t} + \beta_{SMB} SMB_t + \beta_{HML} HML_t + \beta_{UMD} UMD_t + \varepsilon_{i,t}\ ,$$

where $R_{i,t}$ is the excess return for common stock *i* on day *t*, $R_{m,t}$ is the excess market return for the CRSP (Center for Research in Security Prices) value-weighted market index on day *t*, *SMB* is the difference between the daily returns on portfolios of small and large stocks, *HML* is the difference between the daily returns on stock portfolios of high and low book-to-market values, and *UMD* is the difference between daily returns on stock portfolios of positive and negative momentum. $\varepsilon_{i,t}$ is the random error term of stock *i* on day *t*.

We define the announcement day as day zero and estimate the model parameters based on a 300-day window from day 310 through day 11. The abnormal return (AR) for common stock *i* during our event window from day 0 to day *N* is estimated from:

$$(6)\quad AR_{i,t} = R_{i,t} - (\hat{\alpha}_i + \hat{\beta}_m R_{m,t} + \hat{\beta}_{SMB} SMB_t + \hat{\beta}_{HML} HML_t + \hat{\beta}_{UMD} UMD_t).$$

The cumulative abnormal return for the stock *i* from day t_1 to t_n is:

$$(7)\quad CAR_{t_1 \sim t_n} = \sum_{t=t_1}^{t_n} AR_t$$

The test statistics for *AR* and *CAR* are calculated according to Boehmer, Poulsen, and Musumeci (1991).

IV. Data Collection

We manually collect SEC comment letters from the SEC Edgar Database, which provides the content and the date of the comment letters posted on the SEC website. Over 2,000 companies were found to have received SEC comment letters concerning filings of their 10-K annual financial reports during our 2007-2012 time period. We analyze the SEC comment letters to identify the specific annual report(s) where the SEC is questioning the company's disclosure and financial accounting practices. After eliminating companies which do not have all the data required for the various red-flag models, such as being public for at least two years and having quoted stock prices, 1,800 companies remain. These companies are from all five categories of the Standard Industry Classification (SIC) codes.

The letter publishing date is our event day defined as day 0. It is the date when the letter is posted on SEC website and made available for public. Stock prices and accounting data are from the CRSP and Compustat databases, respectively. Our sample period is from January 2007 through December 2012. Following Welch (2000) and Altınkılıç and Hansen (2009), we account for analysts' clustering and piggybacking issues in our sample of SEC comment letters from the 2007-2012 sample.[3] The final sample size is 1,209 comment letters.

[3] Similar to Altınkılıç and Hansen (2009), we identify the piggybacking events based on I/B/E/S, SDC, Mergerstat by Factset, CRSP, and factiva.com. Events include earnings news, guidance, and reports, financial news, security

Descriptive statistics for the questioned firms and normal (unquestioned) firms are presented in Table 1. Red-flag metric statistics are presented in Panel A. In our sample, 203 questioned firms have a red-flag metric of 0; 500 firms have a metric of 1; 320 have a metric of 2; 159 have a metric of 3; 20 have a metric of 4; and seven firms have a metric of 5. The patterns for all five models were consistent with our expectations. Mispricing is also positively related to the red-flag metric. These findings suggest that our red-flag metrics capture the financial strength and stock value of a firm.

The correlations among the five red-flag models are reported in Panel B. We find that these five models are correlated with one another, while the correlation between mispricing and red-flag metrics is positive and significant. It is 0.088 (t-stat=3.28) for the questioned firms and 0.077 (t-stat=10.13) for normal firms. These statistics suggest that the five models in the red-flag metric contain differential information even though all are constructed to gauge a firm's financial strength. Thus, it is meaningful to aggregate the five measures into our red-flag metric.

V. Results

We report evidence in Table 2 that supports Hypothesis 1. If there is information in the issuance of a comment letters from the SEC, we expect questioned firms to have higher red-flag metrics than normal firms. This expectation is confirmed. Model 1 is the PROBIT regression model specified in Equation (1). For the entire sample, we find the intercept, α (=-1.88), is negative and significant. This coefficient indicates that if the red-flag metric equals 0, the probability of being identified by the SEC with a comment letter is approximately 3.09% (cumulative standardized distribution at a standard deviation of -1.88). The coefficient for the red-flag metric, β (=0.20), is positive and significant. As the red-flag metric increases by 1, the chance being questioned by the SEC via a comment letter increases by 0.20 standard deviations assuming the cumulative standardized normal distribution. For example, as the red-flag metric increases from 0 to1, the probability of identification increases from 3.09% to 4.68% (cumulative standardized distribution at a standard deviation of −1.88+0.20). The test results are similar across industries.

To examine how market attention affects the probability of being questioned by the SEC, we include the number of financial analysts (*NUMEST*) in Model 2. As documented in Cohen and Frazzini (2008), *NUMEST* in the IBES database is a reasonable proxy for market attention. The results in Model 2 show that the coefficient for *NUMEST* (=--0.02 with a χ^2 of 24.71), is negative and significant. The probability of being identified and issued an SEC generated comment letter is inversely related to the number of financial analysts. The questioned firms receive less market attention from analysts than normal firms. The results are robust across industries.[4] Regressions on standardized individual red-flag measures in Models 3 and 4 show similar significant results.

After providing evidence supporting the hypothesis that the SEC is able to identify financially troubled firms via the comment letter monitoring process, we examine Hypothesis 2. This test has important implications for investors as it will examine the existence, extent and duration of the mispricing associated with questioned firms. If comment letters signal a firm's financial distress and are also associated with abnormal price performance surrounding and following the issuance, the letters should be able to differentiate underperformance, potential short selling opportunities, potential portfolio stock sales, etc., from the rest.

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issuances, stock repurchases, dividends, dividend changes, capital raising, corporate restructuring, asset sales, workforce changes, divestitures, mergers, new clients, new contracts, new products or projects, outsourcing, product withdrawals, product delays, sales of stakes in another company, accounting policy changes, CEO discussions, governance actions, lawsuits, and management changes.

[4] For a robust test, we also use the five component standardized measures from the red-flag metric as independent variables in the PROBIT estimation. The coefficients are significant for each measure.

Results from estimation of Model 1, Equation (4) are presented in Table 3. For the entire sample, the coefficient for red-flag dummy, β (=0.0045 with a t-stat of 5.70), is positive and significant. This finding indicates that the questioned firms have a higher mispricing component than normal firms, suggesting SEC comment letters contain information about financial issues or concerns faced by the questioned firms.

In this test, we include the red-flag *METRIC* to control and analyze the relation between mispricing and financial distress of a firm. We find that the coefficient for the red-flag metric, θ (=0.1053 with a t-stat of 6.82), is positive and significant. This finding shows that a firm's mispricing component increases in the red-flag metric. Combing the significant and positive β and θ, we conclude that SEC comment letters capture the mispricing of the questioned firms after we control for the level of financial distress. The interaction term, presented in Table 3, *Dummy×METRIC*, η (=0.0009 with a t-stat of 3.48), is positive and significant. This result suggests that financial distress has a greater impact on the mispricing of the questioned firms than unquestioned firms. For instance, given a red-flag metric score of 1, the mispricing for the questioned firms should be higher than that of normal firms by 0.0054 (β+1×η=0.0045+0.0009). The test results for all industries yield a similar conclusion.

For Model 2 in Table 3, we add *NUMEST* and an interaction term (*Dummy×NUMEST*) to Model 1 to control for the market coverage of a firm. For the entire sample, we find the coefficient for Dummy (β) remains significant and positive across all industry groups, showing our results in Model 1 are robust. In addition, the coefficient for *NUMEST* (=--0.0003 with a t-stat of -1.63) is negative but not significant, indicating that the mispricing component is not strongly related to the number of financial analysts following a firm. Nevertheless, the coefficient for *Dummy×NUMEST* (=-0.0004 with a t-stat of -3.44) is negative and significant. This finding means that the questioned firms followed by more analysts are less overvalued than those followed by fewer financial analysts.

Collectively, the results reported in Tables 2 and 3 show that SEC comment letters contain information about the financial distress and mispricing of a firm. We now turn to an examination of the predictability of SEC comment letters for the future returns of those questioned firms. Using standard event study methodology, *cumulative abnormal returns (CAR)* are calculated by red-flag metrics for the questioned firms and depicted in Figure 1.

In Figure 1.a, we find that *CAR* decreases in red-flag metrics. The questioned firms with high metrics drift down gradually after receiving the comment letters from the SEC. However, the questioned firms with low metrics do not decline post-issuance. Figure 1.b displays the *CAR Difference* between the questioned and unquestioned firms. The *CAR Difference* is calculated as the *CAR* of questioned firms minus the *CAR* of unquestioned firms with the same red-flag metric in the same industry. We find that the *CAR Difference* for the questioned firms with low red-flag metrics is negligible, while the difference for the firms with high red-flag metrics is relatively large. With the evidence in aforementioned tables supporting the information content in SEC comment letters and Figure 1 showing return drifts, we observe that the equity market appears to overlook the information contained in the comment letter. The equity market does not react to SEC comment letters promptly, resulting in return drifts.

The test results regarding the return behavior of the questioned firms for twelve months after being questioned by SEC are reported in Table 4. In Panel A, the *CAR* for the firms with *Metric 0* drifts up for the subsequent twelve months, although it is not statistically significant for the duration. *CAR* in twelve months, for instance, drifts up to 3.95% (t-stat=1.43). Firms with red-flag *metrics of 1*, *2*, or *3* do not significantly underperform the market either. Contrarily, firms with *Metric 5* underperform the market and drift down to -61.17% (t-stat=-3.74) in twelve months. *Metric 4* declines gradually as well and underperforms the market by 28.05% in twelve months. These results suggest that SEC comment letters predict the performance of the questioned firms with severe financial distress, but not for firms that are relatively healthy.

Further exploration of the behavior of the *CARs* for the questioned firms is presented in Panel B. We report the statistical test results for *CAR Difference* between the questioned firms and normal firms. Although Panel A reveals a nontrivial *CAR* for *Metric 0* of the questioned firms, Panel B shows the *CAR Difference* for Metric 0 is minimal. This finding shows that the stocks with *Metric 0* in general outperform the market regardless of being identified as a questioned or normal firm. Inversely, the questioned firms in *Metric 5* not only underperform the market by 61.17% in twelve months, but also fall behind their peers by 49.05% (t-stat=-3.40) as shown in the last row of Panel B. The results presented in Table 4 are consistent with Hypothesis 3. We conclude that the market fails to incorporate the value of SEC comment letters and reacts sluggishly to the salient news. A significant downward drift in excess returns is observed for questioned firms with severe financial distress.

VI. Conclusions and Implications

Our results show that comment letters questioning financial statements and disclosures anticipate the price performance for firms that exhibit significant financial distress. Those questioned firms not only underperform the market but also underperform a control group of unquestioned firms. We found that the questioned firms continued to underperform for at least three quarters following the publication date of the letter. If we add a dimension of analysis that isolates questioned firms with high red-flag forensic metrics, the downward drift lasted for more than nine months.

We recognize that not all comment letters are equal or material in their impact. The majority of the comment letters primarily reflect a clean opinion or reflect only minor issues. However, the identification of specific letters or segments of the letters, that specify significant and material concerns with a firm's financial reporting practices, represent not only the opportunity to inform and enhance forensic and security analysis but the opportunity to identify a singular investment proposition as well. For example, an excerpt from a recent Bloomberg press article illustrates short sellers as active users of comment letters and the associated SEC staff correspondence:

> "Muddy Waters LLC, whose analyst reports triggered seven billion dollars in losses for Chinese stocks, uses an unlikely secret weapon for its research: the public website of the U.S. Securities and Exchange Commission.
>
> Carson Block, the thirty-six-year-old short-seller who heads Muddy Waters, said he's an avid reader of letters from the SEC's corporation-finance experts to executives about the adequacy of disclosures and financial reporting in regulatory filings.
>
> "The CorpFin accountants do a good job of spotting issues in the companies' filings," said Block, co-author of "Doing Business in China for Dummies." "We've read some astute questions from CorpFin on a range of issues."
>
> Informed by such correspondence, the research firm's 2010 report on Chinese waste treatment company Rino International Corp. (RINO) helped drive that firm's stock from thirteen dollars to almost zero, erasing about $370 million in market value. It wasn't a fluke." (Sandler, 2013).

Carson Black was featured as one of the five short sellers who exposed the Chinese reverse merger or reverse takeover (RTO) strategy which enabled these Chinese companies to avoid the SEC scrutiny of an initial public offering when listing their stocks on U.S. stock exchanges (Bases et. al., 2011). Of the approximately 500 Chinese RTO companies, over 100 have been delisted by U.S. stock exchanges and have destroyed over forty billion dollars in market capitalization (McKinsey & Company 2013). For such forensic and security research efforts, Carson Black received death threats and had to move his office from Hong Kong back to an undisclosed U.S. West Coast location. He recently said that he refuses to investigate Russian companies, possibly due to the threat of the Russian mobs.

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Table 1: Descriptive Statistics

This table details the descriptive statistics for the questioned firms and normal firms. Panel A shows the basic statistics by number of red-flag metrics from 0 to 5. In Panel B, the correlation is the Pearson correlation coefficient.

Panel A: Metric statistics							
Questioned Firms							
	0	1	2	3	4	5	Average
Obs.	203	500	320	159	20	7	
Revenue Quality	109.9%	94.2%	75.0%	63.8%	55.5%	49.3%	86.8%
Sloan Accrual	-10.2%	-8.7%	-6.9%	1.9%	8.2%	11.7%	-6.7%
Altman Z Score	-1.61	-1.09	-0.62	-0.60	0.80	-0.06	-0.95
Beneish Score	-3.14	-2.12	-1.51	-0.74	1.09	2.55	-1.87
F score	-9.74	-7.97	-5.28	-1.09	3.34	7.63	-6.37
Mispricing	-4.2%	5.9%	13.1%	18.4%	23.3%	53.3%	8.3%
Normal Firms							
	0	1	2	3	4	5	Average
Obs.	5,604	13,236	8,412	1764	294	126	
Revenue Quality	108.2%	95.8%	81.1%	68.3%	57.0%	59.5%	89.5%
Sloan Accrual	-12.9%	-12.3%	-11.4%	-2.2%	6.5%	36.6%	-10.2%
Altman Z score	-1.94	-1.70	-1.18	-1.05	0.35	0.94	-1.47
Beneish Score	-3.22	-2.29	-1.65	-0.90	0.90	1.88	-2.02
F score	-9.41	-7.00	-4.94	-1.11	3.24	6.17	-5.84
Mispricing	-3.6%	8.1%	14.4%	16.2%	19.9%	45.9%	9.3%

Panel B: Correlation

Questioned Firms				
	Sloan Accrual	Altman Z Score	Beneish Score	F Score
Revenue Quality	-0.01231	-0.00161	-0.00215	-0.07807
	(-1.35)	(-0.57)	(-0.71)	(-1.18)
Sloan Accrual		0.08600	0.00051	0.08321
		-1.06	-0.38	-1.21
Altman Z Score			0.00020	0.08579
			-1.12	-1.37
Beneish Score				0.01379
				-1.19
CORR (Mispricing, Metric)	0.088			
	-3.28			

Normal Firms				
	Sloan Accrual	Altman Z Score	Beneish Score	F Score
Revenue Quality	-0.03660	-0.00207	-0.00100	-0.10922
	(-1.03)	(-0.51)	(-0.98)	(-1.06)
Sloan Accrual		0.08414	0.00049	0.08243
		-1.31	-0.87	-0.81
Altman Z Score			0.00020	0.07855
			-1.44	-1.37
Beneish Score				0.01462
				-1.16
CORR (Mispricing, Metric)	0.0774			
	-10.13			

Table 2: PROBIT regression test results

$$(1) \quad p = \Pr ob(Y = 0) = C + (1 - C) \times \Phi(\alpha + \beta \cdot \mathrm{Re}\, d\_Flag\_Metric)$$

This table reports the test results for Hypothesis 1 in examining the financial strength of the questioned firms. In Equation (1), Y=1 for the questioned firms and 0, otherwise. Φ is the cumulative normal distribution function, and *C* is the natural response rate. The *Red_Flag_Metric* is described in Exhibit 1. *NUMEST* is the number of financial analysts. A significant and positive β indicates that SEC picks up the firms with weaker financial strength. "*" denotes the significance level at less than the five percent level.

Panel A: Regression on Metric							
		Model 1			Model 2		
		Estimate	χ^2	$p > \chi^2$	Estimate	χ^2	$p > \chi^2$
All	Intercept	-1.88*	59.84	<0.01	-1.87*	56.13	<0.01
	Red-Flag Metric	0.20*	28.46	<0.01	0.19*	26.31	<0.01
	NUMEST				-0.02*	24.71	<0.01
Consumer	Intercept	-1.69*	42.86	<0.01	-1.72*	37.25	<0.01
	Red-Flag Metric	0.21*	25.52	<0.01	0.23*	19.08	<0.01
	NUMEST				-0.01*	16.55	<0.01
Heath	Intercept	-1.77*	36.16	<0.01	-1.82*	32.28	<0.01
	Red-Flag Metric	0.18*	18.24	<0.01	0.15*	15.65	<0.01
	NUMEST				-0.01*	17.33	<0.01
High Tech	Intercept	-1.71*	42.45	<0.01	-1.81*	35.64	<0.01
	Red-Flag Metric	0.20*	17.13	<0.01	0.20*	14.80	<0.01
	NUMEST				-0.03*	22.04	<0.01
Manufacture	Intercept	-1.66*	37.33	<0.01	-1.69*	33.08	<0.01
	Red-Flag Metric	0.16*	17.48	<0.01	0.16*	13.74	<0.01
	NUMEST				-0.02*	18.69	<0.01
Other	Intercept	-1.77*	46.61	<0.01	-1.72*	36.86	<0.01
	Metric	0.21*	16.33	<0.01	0.20*	18.18	<0.01
	NUMEST				-0.02*	21.35	<0.01
Panel B: Regression on standardized individual measures of red-flags							
		Model 3			Model 4		
		Estimate	χ^2	$p > \chi^2$	Estimate	χ^2	$p > \chi^2$
All	Intercept	-2.20*	55.13	<0.01	-2.18*	59.24	<0.01
	Revenue Quality	-0.05*	6.42	<0.01	-0.04*	5.58	<0.01
	Sloan Accrual	0.04*	9.05	<0.01	0.04*	9.44	<0.01
	Altman Z score	0.02*	22.81	<0.01	0.01*	18.75	<0.01
	Beneish Score	0.03*	4.37	0.041	0.03*	3.47	0.03
	F score	0.08*	18.18	<0.01	0.07*	15.37	<0.01
	NUMEST				-0.03*	16.32	<0.01

Table 3: Mispricing test results

$$(2)\quad \tilde{\varepsilon}_i = \alpha + \beta \times Dummy + \theta \times METRIC_i + \eta \times Dummy \times METRIC_i + e_i$$

This table shows the test results for mispricing. In Model 1 according to Equation (2), *Dummy* is 1 for the questioned firms, 0 otherwise. A positive β indicates that the questioned firms have a higher mispricing component than normal firms. If SEC comment letters contain the information about the financial problems of the questioned firms, β should be significant. We also include the Red-flag *Metric* to examine the relationship between mispricing and the degree of financial troubles. A positive and significant θ suggests that mispricing increases in the degree of financial troubles. The interaction term, *Metric*×*Dummy*, examines if financial strength has a greater impact on the mispricing of the questioned firms than normal firms. In Model 2, we add *NUMEST* and *NUMEST*×*Dummy*. *NUMEST* is the number of financial analysts. T-statistics are reported in parentheses. "*" denotes the significance level at less than the five percent level.

	Model 1							
	Intercept		*Dummy*		*Metric*		*Metric*×*Dummy*	
All	0.0706*	2.32	0.0045*	5.70	0.1053*	6.82	0.0009*	3.48
Consumer	0.1024*	2.56	0.0040*	4.42	0.0640*	4.18	0.0006*	3.38
Health	0.0864*	2.68	0.0032*	3.72	0.0919*	4.68	0.0007*	2.86
High Tech	0.1209*	2.00	0.0047*	3.11	0.1146*	3.81	0.0009*	4.13
Manufacture	0.0533*	2.66	0.0033*	4.17	0.0615*	5.23	0.0008*	3.38
Other	0.0760*	2.07	0.0051*	3.49	0.0699*	4.13	0.0009*	4.37

	Model 2											
	Intercept		*Dummy*		*Metric*		*Metric*×*Dummy*		*NUMEST*		*NUMEST*×*Dummy*	
All	0.0709*	2.24	0.0045*	5.62	0.0963*	6.59	0.0008*	2.93	-0.0003*	-1.63	-0.0004*	-3.44
Consumer	0.0963*	2.37	0.0037*	4.12	0.0594*	4.22	0.0005*	2.94	-0.0003*	-0.96	-0.0004*	-2.71
Health	0.0756*	2.49	0.0041*	3.81	0.0936*	4.47	0.0006*	2.74	-0.0001*	-0.82	-0.0005*	-4.93
High Tech	0.1229*	2.07	0.0047*	2.85	0.0893*	3.54	0.0009*	3.67	-0.0003*	-0.57	-0.0003*	-4.04
Manufacture	0.0560*	2.35	0.0050*	4.33	0.0767*	4.96	0.0008*	3.48	-0.0001*	-0.72	-0.0003*	-3.16
Other	0.0677*	2.44	0.0037*	3.01	0.0625*	3.87	0.0007*	4.09	-0.0002*	-0.71	-0.0002*	-2.77

Table 4: Cumulative returns for twelve months after the event

This table reports the cumulative abnormal returns (CAR) for twelve months after SEC published the comment letters. *CAR* is the cumulative abnormal return specified in Equation (7). Panel A reports the CAR from the event day to 12 months after the event. In Panel B, the *CAR Difference* is calculated as the *CAR* of questioned firms minus the *CAR* of normal firms with the same red-flag metric in the same industry. T-statistics are reported in parentheses. "*" denotes the significance level at less than the five percent level.

Panel A: *CAR* by Metrics for the 12 month after the event date						
	Metric 0	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5
Obs.	203	500	320	159	20	7
Month 1	1.62%	-0.12%	-0.31%	-2.71%	-0.28%	-4.31%
	(0.11)	(-0.10)	(-0.19)	(-0.67)	(-0.68)	(-0.81)
Month 2	-0.34%	-1.40%	0.22%	-3.53%	-8.33%	-13.57%
	(-0.07)	(-1.08)	(0.61)	(-0.81)	(-1.21)	(-1.54)
Month 3	2.08%	-0.72%	-0.66%	-5.94%	-12.11%	-17.75%
	(1.01)	(-0.17)	(-0.28)	(-1.35)	(-1.43)	(-1.42)
Month 4	3.84%	-1.95%	-2.19%	-9.29%	-15.68%	-14.21%
	(0.83)	(-0.39)	(-0.38)	(-0.92)	(-1.59)	(-1.43)
Month 5	4.58%	-2.84%	-1.96%	-9.65%	-21.05%	-18.58%*
	(1.46)	(-0.52)	(-0.45)	(-0.86)	(-1.57)	(-2.01)
Month 6	4.18%	-1.99%	-2.28%	-7.61%	-24.71%	-15.50%*
	(1.42)	(-0.61)	(-0.16)	(-1.27)	(-1.80)	(-2.58)
Month 7	3.45%	-2.83%	-0.91%	-9.59%	-27.51%*	-18.84%*
	(1.39)	(-0.44)	(-0.26)	(-1.10)	(-2.07)	(-2.60)
Month 8	2.94%	-4.62%	-2.09%	-11.37%	-26.56%*	-16.65%*
	(1.28)	(-0.34)	(-0.24)	(-1.16)	(-2.24)	(-2.77)
Month 9	4.69%	-3.81%	-1.99%	-11.80%	-27.17%*	-29.85%*
	(1.31)	(-0.77)	(-0.11)	(-1.03)	(-2.23)	(-2.86)
Month 10	4.57%	-3.19%	-4.16%	-13.55%	-22.61%*	-44.89%*
	(1.41)	(-0.92)	(-0.39)	(-0.95)	(-2.09)	(-3.64)
Month 11	4.19%	-3.13%	-3.63%	-15.25%	-24.86%*	-49.73%*
	(1.33)	(-0.88)	(-0.58)	(-0.96)	(-2.16)	(-4.17)
Month 12	3.95%	-2.64%	-3.72%	-15.20%	-28.05%*	-61.17%*
	(1.43)	(-0.94)	(-0.45)	(-0.68)	(-2.45)	(-3.74)

Panel B: The *CAR Difference* between questioned firms and normal firms by red-flag metrics						
	Metric 0	Metric 1	Metric 2	Metric 3	Metric 4	Metric 5
Obs.	203	500	320	159	20	7
Month 1	-0.67%	-0.48%	-0.44%	-0.48%	0.50%	0.76%
	(-0.31)	(-0.38)	(-0.28)	(-0.17)	(0.49)	(0.27)
Month 2	1.06%	-0.95%	-0.11%	-1.64%	0.48%	-1.06%
	(0.08)	(-0.43)	(-0.30)	(-0.23)	(0.45)	(-0.65)
Month 3	0.71%	-0.12%	-1.20%	-2.65%	-2.17%	-2.29%
	(0.28)	(-0.31)	(-0.49)	(-0.42)	(-0.33)	(-1.81)
Month 4	-1.75%	0.24%	-0.36%	-3.36%	-3.68%	-6.10%*
	(-0.21)	(0.26)	(-0.15)	(-1.28)	(-0.87)	(-2.27)
Month 5	1.04%	-1.09%	-0.16%	-3.60%	-3.19%	-9.15%
	(0.15)	(-0.27)	(-0.12)	(-1.50)	(-1.79)	(-2.44)
Month 6	1.19%	1.70%	-0.49%	-3.42%	-3.62%*	-14.96%*
	(0.25)	(0.23)	(-0.04)	(-1.17)	(-2.08)	(-2.95)
Month 7	-0.12%	-1.19%	-0.27%	-3.61%	-4.11%*	-17.40%*
	(-0.19)	(-0.08)	(-0.40)	(-0.99)	(-2.45)	(-3.28)
Month 8	-0.51%	-0.10%	-0.06%	-3.44%	-4.51%	-20.76%*
	(-0.02)	(-0.42)	(-0.12)	(-0.84)	(-1.51)	(-3.01)
Month 9	0.55%	-0.06%	-0.66%	-3.61%	-4.84%	-26.17%*
	(0.31)	(-0.06)	(-0.13)	(-1.36)	(-0.88)	(-3.52)
Month 10	-0.06%	0.47%	-0.73%	-4.36%	-6.09%*	-33.49%*
	(-0.15)	(0.13)	(-0.21)	(-1.77)	(-2.65)	(-3.95)
Month 11	-0.62%	0.38%	-1.02%	-4.59%	-6.50%*	-40.14%*
	(-0.11)	(0.16)	(-0.39)	(-1.86)	(-2.11)	(-3.12)
Month 12	0.52%	-0.61%	-0.90%	-4.93%	-6.83%*	-49.05%*
	(0.39)	(-0.09)	(-0.29)	(-1.53)	(-3.05)	(-3.40)

Figure 1: Cumulative abnormal returns by metrics

This figure depicts the CAR for the questioned firms and the difference of CAR between the questioned and normal firms. CAR Difference is specified as $CAR_{Questioned\ Firms} - CAR_{Normal\ Firms}$. CAR is specified in Equation (7)

Figure 1.a *CAR* by *Red-Flag Metrics*

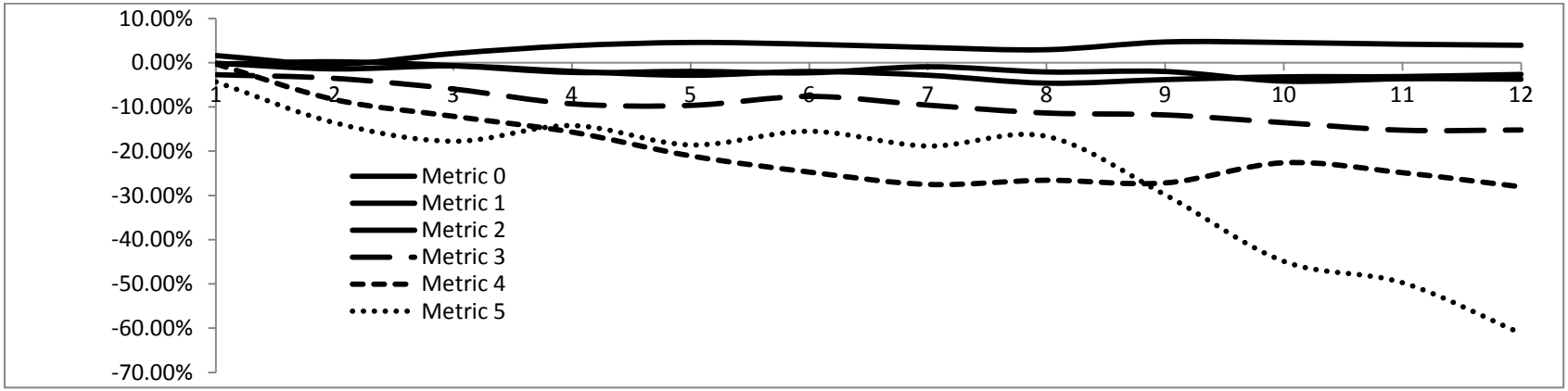

Figure 1.b *CAR* difference between questioned and normal firms by *Red-Flag Metrics*