

Two Essays on Earnings: Investors' Perception of Their Importance and the Accuracy of Analysts' Estimates
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The Informational Content of Earnings Reports: Do Earnings Matter More Now?
-Essay One-

The Internet Bubble during the second half of the 1990s transformed Wall Street unlike any period previously witnessed. From the initial public offering of Netscape Communications Corporation on August 9, 1995 to the March 2000 plunge of the NASDAQ index, technology IPOs and the creation of public companies valued at hundreds or even thousands times sales became a weekly occurrence. New investors and traders flooded the market trying to profit from the faster and greater information flow of the New Economy, and earnings per share became the official benchmark of corporate health. Although primary markets ground to a halt in the years following the boom and subsequent bust, investors' perception of the importance of earnings per share and how it compares to the "consensus", the average of the Wall Street analysts' earnings estimates, has remained extremely strong (Berenson, 2003).

Many have suggested that a regime change occurred during the boom that resulted in an increase in the importance of earnings reports. The change has been attributed to a number of factors including the increased presence of novice investors in the market and the rise of technology firms with complex operations and business models that investors found far more difficult to interpret than those of Old Economy firms. However, the greatest catalysts of the regime change were the increased use and availability of "consensus" earnings estimates and the newfound love affair between earnings per share and the media.

Although many popular finance journalists and authors such as Alex Berenson have dedicated substantial resources to identifying and explaining this regime change, currently, limited statistical evidence exists to demonstrate such a shift in investor ideology. In our study, we attempt to determine if the abnormal return of a stock to a given earnings surprise grew during the Internet Bubble. We define abnormal return as the excess difference between the actual return and expected return while the earnings surprise is the difference between the predicted and actual earnings per share. We collected a sample consisting of each of the Standard and Poor's 100 firms for the 44 quarters between 1990 and 2000 and created an expected return equation. We then used the *Institutional Brokers Estimate System Historical* to determine the expected and actual earnings per share values and calculated the quarterly earnings surprise for each firm. The abnormal return values were found by taking the difference between the actual daily return and the expected return value produced from our equation. We selected 1996 as the cutoff date for the beginning of the Internet Bubble and conducted a regression analysis to determine if abnormal returns for a given earnings surprise had increased during the Internet Bubble. A technology dummy variable was also included in the equation to determine if the magnitude of the abnormal return is sector-related.

Our final regression equation for expected daily returns is: $EDR = a_0 + a_1(MV) + a_2(BTMR) + BETA(MDR) + \epsilon$ We then standardized our calculated earnings surprise and abnormal return data for the 44 quarters and run the

Where EDR = the expected daily return	following basic linear regression model:
MV = the market value of the firm	$SER = a_0 + a_1(SUE) + a_2(SUE * DUMB) + a_4(SUE * DUMS) + \epsilon$
BETA = the beta value of the stock	Where SER = the standardized abnormal return for the stock
BTMR = the book-to-market value of the firm	SUE = the standardized unexpected earnings surprise
MDR = the market daily return	DUMB = takes a value of 1 if 1996-2000 (Internet Bubble, Day Trading, and CNBC peak) and 0 if 1990-1995
	DUMS = dummy technology variable; takes value of 1 if tech stock

The release of Alex Berenson's book, *The Number*, has provided significant credibility to our theory that a regime change occurred during the Internet Bubble that affected the emphasis investors placed on earnings information. Berenson too has pointed to the rise of day trading, increased use and availability of consensus earnings estimates, and growth in CNBC viewership during the Internet Bubble as the primary sources in this change in investor behavior. For numerical evidence of the increased importance of earnings per share information, we can turn to a study conducted at the University of Arizona. The study found that from 1992 to 1995, companies who missed earnings estimates by two cents fell an average of one percent during the three days following the release of their quarterly earnings report. However, from 1995 to 1998, the market's reaction doubled and the stock of a firm whose earnings were two cents less than the consensus predicted fell on average two percent.

We believe that if the *Yale Center for Finance* had succeeded in providing the necessary data to run our regression model, the DUMB variable would have been statistically significant and had a fairly large, positive coefficient. The growing presence of consensus earnings and the reduction of dividend payments leading up to the Internet Bubble in conjunction with increased day trading and media earnings coverage further emphasized earnings information. We also believe that the DUMS variable would have been statistically significant and had a positive coefficient. Although future research that included a larger sample size of technology firms would have been needed to make stronger conclusions, we believe that even this limited technology sample would have indicated that earnings information was more heavily emphasized for technology firms.

The Increase in Earnings Forecasting Error: The Growth in Positive Earnings Surprises During the Internet Bubble

-Essay Two-

The stock market of the 1990's can be characterized briefly as a time of boom and bust often referred to as the Internet Bubble. As quickly as the market grew with new technology firms, the bubble popped leaving the market in upheaval. The market was flooded with new technology firms that became known as the "dot.com" firms which used the new virtual market place, the internet, to conduct business. These firms quickly grew in value, but could not sustain such overly optimistic growth expectations, which led to a market crash and current recession like conditions. The overoptimistic earnings expectations of analysts led to the major accounting scandals that affected all aspects of the economy from the downfall of accounting firm, Arthur Anderson, to the energy trading firm, Enron. At the peak of the bubble, Arthur Anderson was a top five accounting firm and Enron was the world's largest trader of gas and electricity. However by the end of 2001, Enron had filed for bankruptcy and Arthur Anderson was out of business. The Securities and Exchange Commission proved that the two parties collaborated to hide losses and report false profits through an accounting technique called "mark-to-market" that incorporated estimated future profit into current earnings. These accounting techniques allowed new firms to grow in value at an incredible rate without substantial realized earnings increases.

Enron was not alone in reporting fraudulent profit statements. Lucent Technologies, one of the world's largest manufacturers of communications equipment, reported over \$300 million in false profits to the SEC in 1999. In addition, they loaned money to their customers to entice them to purchase more equipment than needed. Even with forced sales, Lucent showed excess inventories because they could not sell at nearly the rate at which they were producing goods. These tactics allowed Lucent to soar in value. In December of 1999, their stock was priced at \$80 per share and the firm was valued at \$250 billion. To compare, at \$250 billion, Lucent exceeded the combined market value of General Motors, Disney, Phillip Morris, and McDonald's. Lucent and Enron are just two examples of many firms who manipulated earnings reports during this era. Their stories demonstrate the extreme and illegal measures that firms were willing to participate in to meet earnings growth expectations.

Why would the managers of these two extremely successful firms take the risk of falsifying earnings reports? The falsification of earnings stems from the obsession with earnings per share information that was mentioned in the previous paper. Earnings announcements represent one mode in which information about the status of the company flows from the firm to the public. The announcements detail the firm's sales, profit, and expenses which all deal with firm cash flow issues. The cash flow of the firm is critical for valuation of the firm's stock as mentioned in the previous paper dealing with Williams' stock valuation model. These earnings announcements allow investors to incorporate firm cash flow information into the valuation of stock.

The rate at which the market responded to earnings information had increased during the 1990's (Busse and Green, 2002), but earnings information is not limited to quarterly earnings announcements. Another key element to the quarterly earnings announcement is the earnings estimates by financial analysts. At the beginning of each quarter, analysts attempt to predict quarterly earnings per share. These forecasts factor into stock valuation such that predicted earnings are used a measure of current stock valuation. Analysts amend their forecasts throughout the quarter and the original earnings forecasts and amendments are collected in databases such as I/B/E/S and First Call. As analysts amend their forecasts, investors also amend their valuation of stocks. The previous study demonstrates the impact of earnings surprises on stock price movements. If forecasts are unbiased, statistically, the expected forecasting error should be zero such that the number of positive (earnings greater than forecast) and negative (earning lower than forecast) forecasting errors should be equal. Bias in analysts' forecasts would shift the distribution of forecasting errors in either direction.

Previous research has shown a forecasting bias by analysts. We believe this bias can be explained by the profit making behavior of the brokerage firms to which the analysts belong. If our desired data had been analyzed, we would have expected to verify our hypothesis by demonstrating that positive earnings surprises are more prevalent for technology firms. We also believe that the MSFE economy component would have been greater than compared to the results shown by Elton *et al.* Our sample consists of only the S&P 100 and therefore includes a limited number of technology firms. Future research with a larger sample will be necessary to further prove our hypothesis.

Conclusion

The two above essays discuss the evolving relationship between abnormal returns and earnings surprises during the Internet Bubble. "The Informational Content of Earnings Reports: Do Earnings Matter More Now" argued that stock price adjustments to new earnings information were more rapid and severe than in any previously witnessed period. Violent reactions to even small earnings shortcomings became commonplace in the market, and managers had little choice but to focus on short-term quarterly earnings per share values. The increased emphasis placed on earnings per share by investors during the Internet Bubble caused investors to rely more heavily on the accuracy of analyst earnings estimates. As CNBC and the rest of the media continued to direct investor attention to quarterly earnings per share values, the analyst became the most powerful individual on Wall Street. His earnings per share figures were read by millions of investors and could be responsible for massive share price swings.

"The Increase in Earnings Forecasting Error: The Growth in Positive Earnings Surprises During the Internet Bubble" addresses the increase in frequency of positive earnings surprises. The shift from a normal distribution of positive and negative errors about the actual earnings suggests forecasting bias. The paper hypothesizes that the bias is due to a shift in the role of the financial analyst. With the increased importance of earnings forecasts, one would expect a high priority for accurate forecasts. However, the opposite appears to occur, which can be explained if one considers that analysts belong to a larger unit, the brokerage firm and investment bank. The ultimate goal of a brokerage firm is to obtain profit through commission from purchasing stock for clients. Underestimating earnings creates a positive earnings surprise, which entices investors into the market. By systematically underestimating earnings, analysts can create higher profits for the brokerage firm by creating a mood of over-optimism in the market and increases participation.

The implications of this study suggest that investors will need to adapt their earnings surprise incorporation methods. If earnings expectations are systematically underestimated, investors must eventually recognize the existence of this bias. Once recognized, a positive earnings surprise will have less of a positive impact on stock price. On the other hand, a negative earnings surprise will lead to a greater decrease in stock price. Earnings surprises will continue to result in abnormal returns because they provide new information that must be incorporated in stock valuation. However, the manner in which investors interpret the magnitude and sign of earnings surprises will need to evolve.

As confusion regarding the accuracy of analyst estimates increases, trading volume will decrease. Analysts will again need to return to an unbiased forecasting method to bring investors back to the market and produce the commissions their brokerage houses rely upon. The answer to this problem may eventually require government intervention and the separation of analysts and brokerages, similar to the separation of commercial and investment banks that resulted from the Glass-Steagall Act of 1933.