



UNITED STATES OF AMERICA
Before the
SECURITIES AND EXCHANGE COMMISSION

In the Matter of)
)
GREGORY T. BOLAN, JR. and) ADMINISTRATIVE PROCEEDING
JOSEPH C. RUGGIERI) File No. 3-16178
)
Respondents.)

EXPERT REPORT OF EDWARD S. O'NEAL¹

My name is Edward S. O'Neal. I have been engaged by the Securities and Exchange Commission (SEC) to provide expert analysis and testimony regarding the trading activity undertaken by Joseph C. Ruggieri as it relates to certain security recommendations made by Gregory T. Bolan, Jr. I am a principal with Securities Litigation and Consulting Group in Fairfax, Virginia. Our firm provides consulting on a broad range of litigation issues related to securities, investments, and the capital markets. I have personally been retained to provide expert witness services on over 200 matters in state and federal courts and various arbitration forums.

I have a Ph.D. in finance from the University of Florida. The Ph.D. program included graduate-level courses in Finance, Economics, and Statistics. My Ph.D. dissertation was an in-depth study of the behavior of the common stocks of electric utility companies and their statistical relationship to movements in the broad stock market and interest rate yields. After graduating from the University of Florida, I taught undergraduate and graduate students for 14 years in the business schools of three universities, most recently Wake Forest University in Winston-Salem, NC. The courses that I taught included Investments and Portfolio Management, Applied Securities Analysis, Corporate Finance and the Management of Financial Institutions. All of my courses included a strong emphasis on the operation and mechanics of the U.S. stock markets.

¹ The observations, analyses, and conclusions set forth in this report may change as additional data and information are made available and analyzed. In addition, I reserve the right to prepare additional charts and graphs as demonstrative exhibits using the data relied upon in the preparation of this report. I also may prepare additional analyses in response to reports and testimony by experts retained by the Respondents.

I have been retained to offer expert testimony on topics in financial economics multiple times in court and in various arbitration forums. The majority of these engagements have involved investment analysis and securities markets. I have specifically been retained in the past to examine the reaction of common stocks to news releases and have performed event studies, a standard economic procedure, in those cases.

My firm is being compensated at the rate of \$400 per hour for my work on this case. The list of materials relied upon in my analysis is included as Appendix 1. Further details of my qualifications are listed in my resume which is attached as Appendix 2 to this report.

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I. Assignment

Respondent Gregory T. Bolan was a research analyst at Wells Fargo from 2008 until 2011 who focused primarily on the health care industry. Respondent Joseph C. Ruggieri was a health care industry stock trader at Wells Fargo from 2009 through 2011.²

The SEC has issued an OIP against the Respondents alleging that, in their respective positions as research analyst and trader at Wells Fargo, they participated in an insider trading scheme. The OIP alleges that Mr. Bolan on several occasions alerted Mr. Ruggieri to forthcoming but not-yet-public ratings changes. Mr. Ruggieri allegedly placed trade orders in advance of the public ratings change announcements in order to benefit from the price movements once the ratings changes were announced.

The purpose of my assignment is to offer an opinion about whether trading ahead of analyst ratings changes would give a trader an unfair advantage over other market participants. I was also asked to examine the ratings change announcements of Mr. Bolan over the period 2009 – 2011 and determine whether the resulting stock price movements appeared to be material to the market. Finally, I was asked to examine whether Mr. Ruggieri's trading around the six ratings changes identified in the SEC's OIP was different from Mr. Ruggieri's typical trading patterns.

II. Summary of Findings

Analyst ratings change announcements impact stock prices. If a trader such as Mr. Ruggieri had the ability to trade ahead of such announcements, he could expect to profit at other investors' expense. Upgrade announcements tend to lead to increases in prices while downgrades tend to decrease prices. Numerous academic studies document this regularity. Given that ratings changes impact stock prices, the ability to trade ahead of such changes would give a trader an unfair advantage over other market participants. A strategy of trading ahead of ratings changes would garner profits at the expense of market participants who did not have access to information about the forthcoming ratings changes.

² Order Instituting Administrative and Cease-and-Desist Proceedings ("OIP"), p. 2.

Mr. Bolan's ratings changes appear to have affected the market prices of the rated stocks just like those of other analysts. I find that the price of the stocks moved in the expected direction: up for an upgrade, down for a downgrade. Over the period 2009 – 2011, Wells Fargo released 18 ratings changes authored by Mr. Bolan. Ten were determined not to be accompanied by other material announcements about the stock involved. The stock price reactions to these ten ratings change announcements by Mr. Bolan were consistent with the academic literature. The stock prices tended to move in the direction of the ratings changes indicating that trading in advance of the ratings changes would be profitable.

Mr. Ruggieri's trading around the six ratings changes identified in the SEC's OIP was not typical for Mr. Ruggieri. Statistical analysis points to Mr. Ruggieri purposefully trading ahead of the ratings change announcements. Over 98% of Mr. Ruggieri's trading involved opening and closing positions during the trading day. Less than 2% of the time he held positions overnight. For each of the trades at issue in this case, Mr. Ruggieri held the position overnight. This would have been necessary to profit on the not-yet-public information in the ratings change because each of the six ratings change announcements came out after the stock market was closed. Mr. Ruggieri occasionally held overnight positions in stocks on which Bolan released research reports. However, the statistical probability that Mr. Ruggieri happened to trade overnight by chance in six of eight stocks with a Bolan ratings change is virtually zero.

III. Published Research Demonstrates that Stock Prices React Significantly to Analysts' Ratings Changes

This case involves allegations that a trader obtained information about forthcoming but not-yet-public analyst ratings changes and then built positions in the stocks to profit once the ratings change was announced. There are hundreds of published peer-reviewed articles that examine how releases of certain non-public information affect the prices of stocks. One strand of this literature focuses specifically on whether analysts' ratings change announcements have a measurable effect on stock prices. The conclusion of almost all researchers that have studied this phenomenon is that analyst ratings changes do have a measurable and significant impact on stock prices. On average, when the announcement is released that an analyst has changed a rating to "buy" or "outperform," the

stock's price increases. Similarly, when an analyst downgrades a stock to "sell" or "underperform," the stock's price falls. Hence, advance knowledge of a forthcoming ratings change could be used to trade profitably ahead of other traders in the market. In this section, I briefly review some of the papers that demonstrate that announcements of analyst ratings changes impact stock prices.

A number of published academic papers show that research analyst recommendation changes lead to significant price movements in the stocks that are the subject of the changes. For example, Womack (1996) looked at the 3-day price reaction surrounding analyst recommendation changes to "buy" or to "sell."³ He found that recommendation changes to "buy" led to average returns of +3% while changes to "sell" led to average returns of -4.7% in the three days surrounding the change and that these changes were highly statistically significant. Womack also documented that the stock price reactions were greater in magnitude for smaller stocks than for larger stocks as defined by total market capitalization. Finally, Womack showed that volume on the day of the announcement increases significantly, showing that stock market participants deem the information contained in a recommendation change important.

Green (2004) studied the stock price movements in response to ratings changes by looking at the stock price movements minute by minute and hour by hour.⁴ For ratings changes made after trading hours, he found that the majority of the price movement occurs between the previous day closing and the next day opening. Although the stock price continues to move in the direction of the ratings change over the next few hours after the stock market begins trading, the largest bump occurs at the opening. This evidence demonstrates that the most profitable way to trade in relation to an analyst ratings change would be to buy the stock the day before the change and sell it the day after the change. Of course, such a strategy would only be possible with advance information about the ratings change announcement.

³ See Kent Womack, "Do brokerage analysts' recommendations have investment value?," *Journal of Finance* 51, pages 137-167 (1996).

⁴ See T.C. Green, "The value of client access to analyst recommendations," *Journal of Financial and Quantitative Analysis* 41 pages 1 – 24. (2006)

Brav and Lehavy (2003) examined stock price reactions to analysts' changes in target prices.⁵ They find that positive changes in target prices (i.e., an analyst increasing the price that he or she expects a stock to attain over a specified period) on average led to positive and statistically significant stock price reaction over the 5 days surrounding the announcement. They also find a negative and statistically significant stock price reaction to negative target price revisions.

In a recent contrary paper, Altinkilic and Hansen (2009) use intra-day stock returns to examine recommendations during trading hours and find that analyst recommendation changes themselves do not lead to abnormal returns but that the changes are "piggybacked" on other concurrent news about the company being recommended.⁶ However, Bradley, et al. (2014) show that systematic errors in the time-stamp data used by Altinkilic and Hansen (2009) to pinpoint the time of the analyst revisions drive their counter results.⁷ Once the correct time-stamps are used for the analyst revision announcements, stock price returns of +2% in the 30 minutes after an upgrade and -2% in the 30 minutes after the downgrade are documented. Further, Bradley et al. (2014) demonstrate that a sizeable number of analyst revisions are associated with "jumps" in the stock price. A jump is a discrete large movement in the stock price which is a departure from smooth and continuous changes in prices that are typically observed. As with the increased volume found by Womack (1996), jumps indicate market participants are influenced by analyst recommendation changes.

The published research demonstrates that when an analyst changes the recommendation rating on a stock (for example from "hold" to "buy" or from "hold" to "sell"), the price of the stock tends to move in the direction of the change. Given this regularity, the ability to trade ahead of the announcements of analyst recommendation changes would be profitable. A scheme to alert a trader to an imminent change in an analyst rating would give that trader an unfair advantage over other market participants. Although trading on the information might not necessarily be profitable on every single trade, over the

⁵ See Alon Brav and Reuven Lehavy, "An empirical analysis of analysts' target prices: short-term informativeness and long-term dynamics," *Journal of Finance* 53, pages 1933 – 1967 (2003).

⁶ See Ova Altinkilic and Robert Hansen, "On the information role of stock recommendation revisions," *Journal of Accounting and Economics* 48, pages 17-36 (2009).

⁷ See Daniel Bradley, Jonathan Clarke, Suzanne Lee and Chayawat Omthanalai, "Are analyst recommendations informative? Intraday Evidence on the impact of time stamp delays," *Journal of Finance* 69, pages 645-673 (2014).

long run it would allow the trader to obtain superior returns at the expense of other market participants.

IV. Stock Prices Reacted Significantly to Mr. Bolan's Ratings Changes

The research cited in the previous section of this report demonstrates that analyst ratings changes impact stock prices. If a trader knew about forthcoming ratings changes, he or she could use that information to profit at the expense of other traders. In this section I examine the ratings changes in the analyst reports authored by Mr. Bolan over the time period at issue in this case. The purpose of this analysis is to see whether, in this very limited sample of Mr. Bolan's ratings changes, the stock prices of the rated securities tend to exhibit characteristics that are similar to those found in the broader studies cited above. Importantly, the findings in this section are not critical to my opinion that trading on forthcoming ratings changes would be expected to generate abnormal profits. With small samples, such as the one I have for Mr. Bolan, it is possible that a statistical relationship might not be found. However, my analysis does show that Mr. Bolan's ratings changes impact stock prices just as is found in published studies for large samples of analyst ratings changes.

The analysis that follows in this section is standard methodology for examining stock price reactions and has been developed over the past 30 or 40 years in the financial economics literature. Though it may seem complicated, the approach is very intuitive. The task is to try to determine if the movements in stock prices can be attributed to the ratings changes. We gather the stock prices on days of ratings change announcements and determine whether they seem to move up with an upgrade and down with a downgrade. Before we draw a conclusion, however, we do our best to make sure we are not attributing stock price movements to the ratings change that might be caused by something other than the ratings change. The two most important potential problems are 1) that other material information might have been released about the same time as the ratings change, and 2) broad stock market movements might have pushed the stock in the direction of the ratings change simply by chance. In the paragraphs that follow, I outline the steps that are typically taken to handle these two potential problems. Once we address these two issues that are present in all studies

such as this, our results show that Bolan's ratings changes did tend to move the stock prices when the ratings changes were announced.

It is my understanding that Mr. Ruggieri undertook trading in advance of six of Mr. Bolan's subsequent ratings change announcements. Those ratings changes are:

1. Parexel International Corp. (PRXL), April 7, 2010, downgrade.
2. Covance, Inc. (CVD), June 15, 2010, upgrade.
3. Albany Molecular Research, Inc. (AMRI), July 6, 2010, upgrade.
4. Emdeon, Inc. (EM), August 16, 2010, upgrade.
5. Athenahealth, Inc. (ATHN), February 8, 2011, upgrade.
6. Brinker Corp. (BRKR), March 29, 2011, initiation of coverage with outperform rating.

I was provided with a spreadsheet that contained all of Mr. Bolan's analyst recommendations between September 16, 2008 and April 25, 2011. The majority of those recommendations affirmed the rating that Mr. Bolan had previously held on the stock being rated. Some of those recommendations initiated coverage with a hold rating. Eighteen of the recommendations were either changes from the previous recommendation or an initiation of coverage with a buy or a sell rating.⁸ I collected all 18 of these recommendation changes to analyze the effect that the change announcements had on the stock prices of the affected securities. The six trades at issue in this case (listed in the paragraph above) are a subset of the 18.

Using standard event-study methodology, I analyzed these 18 recommendation change announcements to determine whether the announcements on average had an effect on the stocks. As is standard in event-studies, I first looked at all news reports on the stocks in the days surrounding the announcement of Bolan's recommendation change. If there was a news report that released material information about the company in the two days before or two days after the announcement date, I removed that announcement from the analysis. The purpose of such a procedure is to prevent stock price movements due to information other

⁸ For the remainder of this report, I call all 18 of these instances "recommendation changes."

than the recommendation change announcement from affecting the results. If such instances are not removed, the subsequent analysis might wrongly attribute the stock price movement to the ratings change announcement when in fact it was due to the release of other material information. Eight of the announcements had confounding information. When those eight are removed from the data, ten “clean” or “non-confounded” announcements remain.

With the ten clean announcements, I performed an event study. The event study methodology is used by economists to assess the impact of a broad range of information disclosures on security prices.⁹ An event study is conducted by identifying releases of information to the public, measuring the stock price reaction to the information release over some short period of time (typically one or two days) and testing the statistical significance of the price reaction. The event study technique was developed in the 1960s and 1970s to determine whether information that was being released to the public affected stock prices. The methodology is well understood and is a fundamental topic of study in graduate-level finance programs.

Standard event study methodology consists of examining stock returns to determine whether the event (in our case, the announcement of a ratings change) tends to have an impact on the stock price. The stock returns for companies that experience an event are adjusted for returns to the broad stock market, an industry-specific subset of the market or both. The rationale behind the adjustment is that stock movements tend to be correlated; market or industry-specific factors will cause stock prices to move. It is important to control for these factors in order to isolate the effect of the event in question. For each of the ten clean announcements, I estimated a market model as is standard in the academic literature using a multiple regression. The market model is shown in the equation below:

$$ER_j = a_j + B_m * R_m + B_i * R_i$$

Where,

⁹ See Stephen J. Brown and Jerold B. Warner, “Measuring Security Price Performance” *Journal of Financial Economics* 1980 pp. 205-258; Stephen J. Brown and Jerold B. Warner, “Using Daily Stock Returns: The Case of Event Studies” *Journal of Financial Economics* 1985 pp. 3-31; Mark P. Kritzman, “What Practitioners Need to Know About Event Studies” *Financial Analysts Journal* November-December 1994 pp. 17-20; Mark L. Mitchell and Jeffrey M. Netter, “The Role of Financial Economists in Securities Fraud Cases: Applications at the Securities and Exchange Commission” *The Business Lawyer* February 1994 pp. 545-590.

ER_j = the expected return to stock j

a_i = an alpha term generated by the regression

B_m = the beta of the stock relative to a market index proxied by the NASDAQ Composite index

R_m = the return to the NASDAQ Composite index

B_i = the beta of the stock relative to the healthcare services industry proxied by the NASDAQ Health Services index.

R_i = the return to the NASDAQ Health Services index.

The expected return in the equation above is based on the stock's historical relationship to the indexes. This expected return is used as a baseline. The event study is an analysis of the deviation from this baseline that results from the event in question. Most stocks tend to be positively correlated with the market. When the market moves in a particular direction (up or down) most stocks also move in the same direction. However, some stocks may move by more than the market while others may move by less than the market. For example, if a particular stock tends to exhibit a return that is 1.5 times that of the broad market, and the market falls by 2%, we would expect the stock to fall by 3% (1.5 * 2%). This 3% decline would be the expected return on the stock on a day where the broad market declines by 2%.

For each of the ten stocks, I estimated the market model over the one year leading up to the date of the ratings change announcement. I used the NASDAQ Composite index to proxy for the broad market (since all the stocks that are subjects of the ratings changes traded on the NASDAQ) and the NASDAQ Health Services Index to proxy for the industry in which the companies operate. The next step is to determine the unexpected return on the date of the ratings change for each of the ten stocks. This calculation tells us whether the event actually had any additional impact on the price of a stock over and above the movement in the broad market and the health services industry. It is calculated as the difference between the observed return (actual stock price movements) and the expected return (expected stock price movements). Continuing our simple example, if the market

declined by 2% leading to an expected decline of 3% for our stock, but the stock actually dropped by 7%, then the unexpected return would be 4% (7% - 3%).

For each of the ten announcements, I calculated the unexpected return. Table 1 shows the unexpected returns from the ratings change announcement for each of the ten stocks. Eight of the unexpected returns are positive and two are negative. It is important to consider the signs in the context of the direction of the ratings change. Note that the two ratings changes that produce negative stock returns are downgrades. If the downgrade signals information to the market, I would expect a negative stock price return in reaction to a downgrade. Similarly, if an upgrade signals information to the market I would expect an upgrade to be accompanied by a positive stock return. The eight positive unexpected returns are all on stocks that Mr. Bolan upgraded. Therefore for all ten ratings change announcements, the stock price reaction is in the direction consistent with ratings changes conveying information to the market. This finding is also consistent with the academic literature that shows that analyst ratings changes are material information to market participants.

Table 1: Unexpected Returns to the Sample of Clean Bolan Ratings Changes

Date	Ticker	Recommendation Change	Predicted Sign of the Unexpected Return	Observed Return	Unexpected Return	Unexpected Return t-Statistic
9/17/2008	KNDL	Resume at Outperform	+	-1.9%	2.4%	1.21
9/17/2008	PPDI	Initiate at Outperform	+	-1.6%	1.1%	0.65
10/13/2008	ICLR	Upgrade	+	15.8%	9.4%	3.64
2/2/2009	PRXL	Upgrade	+	1.0%	0.1%	0.04
2/16/2010	QSII	Upgrade	+	2.4%	1.1%	0.56
4/7/2010	PRXL	Downgrade	-	-4.3%	-3.8%	-1.19
7/6/2010	AMRI	Upgrade	+	-0.2%	0.6%	0.26
11/29/2010	PRXL	Downgrade	-	-5.6%	-5.1%	-2.53
2/8/2011	ATHN	Upgrade	+	4.1%	3.5%	1.08
3/30/2011	BRKR	Initiate at Outperform	+	3.4%	2.2%	1.25

Notes: The dates reported in the table are the first trading dates after the analyst reports were published. All 10 analyst reports were published after trading closed on the previous trading day. The unexpected return is the difference between the observed return and the expected return. The expected return is estimated by regressing each ticker's daily stock return for the previous year against the daily return of the NASDAQ Composite index and the NASDAQ Health Services index. The regression uses the natural log of returns. Returns are de-logged for presentation in the table. T-statistics greater than 1.96 in absolute value are statistically significant at the 95% level and are in bold font in the table.

I looked at each of the ten unexpected stock returns individually and found that two of the ten are statistically different from zero. This statistical test is geared at determining whether the return to one stock can be said to be reliably different from zero. This determination is based on the magnitude of the return on the day of the ratings change compared to the typical magnitudes of daily returns to the same stock. If a stock is quite volatile from day to day, it will take a very large movement on the day in question to show that the return is statistically different from zero. For example, if a stock on average has returns that are plus or minus 2% each day, and the return on the day of an upgrade is 2.5%, this return may not look much different from any other daily return (it is 1.25 times as large as the returns on any typical day). Conversely, if the daily returns to a more stable stock are generally plus or minus 0.5% each day, the same 2.5% return might appear quite large and thus be statistically different from typical daily returns for that stock (it is 5 times larger than the return on any typical day). Because the stocks that Mr. Bolan is rating are smaller stocks, they are generally quite volatile and require a very high return on the day in question to achieve statistical significance. The returns on the announcement days are high enough to appear statistically different from a typical day in two out of the ten instances.

More frequently in studies of ratings change announcements, the statistical analysis is aimed at trying to determine whether the stock returns on the announcement days are significant as a group rather than individually. In this procedure, the returns on the announcement days are collected, averaged and then analyzed relative to the variability across the group. If the average is high enough above zero given the variability of the returns across the group, we can feel confident that the returns are statistically positive. For example, assume we had 5 stocks and the returns were 3%, 1%, 2%, 4%, and 0%. The average return is 2% and the range is fairly tightly grouped around the average of 2%. Conversely, take a second sample where the returns are +6%, -8%, +10%, -6%, and +8%. The average return in this second sample is also 2%, but given the much higher degree of variability, it would be more difficult to say for sure that the sample of five returns represent a population where the average is above zero. It would not be much of a surprise if the next stock in the second group was found to have a return of -12%, at which point the average of the now group of six returns would then be zero. We would feel more confident about the first sample being from a population where the true mean is greater than zero. In the

following paragraphs, I explain the methodology for testing the statistical significance of the ten of Bolan's clean ratings change announcements as a group

I calculated a directional unexpected return by multiplying the actual abnormal return by 1 for upgrades and by -1 for downgrades. This simple transformation allows for more meaningful calculation of summary statistics because it causes the signs for negative returns in response to downgrades to have the same interpretation as positive returns in response to upgrades. The magnitude of the directional unexpected returns ranges from 0.2% to 8.5%. The average directional unexpected return is 2.9% which is very close to the 3% that Womack (1996) identified as the average market response to analyst upgrade announcements.

The sample of Mr. Bolan's ratings changes is small relative to the sample sizes in the academic studies of ratings changes (for example, Womack had 1,573 ratings changes in his sample). Typically, it is more difficult to find statistical significance in smaller samples. However, the fact that all 10 of the clean ratings changes are accompanied by abnormal stock price movements in the expected direction (positive for upgrades and negative for downgrades) strongly suggests that Mr. Bolan's ratings changes affect stock prices in a manner consistent with the academic findings in large samples.

I performed a binomial test to determine the likelihood of observing ten out of ten correct directional abnormal returns if there is no information content in Bolan's ratings changes. This test is similar to trying to figure out the likelihood of flipping ten straight heads if a coin is fair. In this case, the calculation is quite simple: $(.5)^{10} = .001$. The probability is only .1% that we would observe abnormal returns in the correct direction in all ten cases if Mr. Bolan's ratings changes did not contain material information. The strong inference is that Mr. Bolan's ratings changes did in fact contain information that was material to the market.¹⁰

I also calculated a standard statistical significance test on the average abnormal returns on the ten announcements. The test statistic is calculated as the average abnormal

¹⁰ As previously explained, I eliminated 8 of the 18 announcement dates because of confounding information that was released very close to the time of Mr. Bolan's ratings change. The elimination of confounded announcements is standard event-study practice. However, if we consider all 18 announcements, 15 of the 18 announcements were accompanied by abnormal stock returns in the direction expected given the direction of the ratings change. The probability of observing 15 out of 18 in the correct direction simply by chance is 0.4%.

return divided by the standard deviation scaled by $(N-1)^{1/2}$ where N is the number of observations. This calculation gives a standardized abnormal return (SAR) and is distributed T with (N-1) degrees of freedom. The calculation is: $SAR = 2.900/(2.54/SQRT(9)) = 3.44$. The p-value of this calculation for 9 degrees of freedom is approximately .005 meaning that we are confident at the 99.5% level that the abnormal returns indicate informational content.

My opinion is that the ability to trade ahead of analyst ratings changes would give a trader an unfair advantage over other market participants. As I mentioned in previous paragraphs, this opinion is independent of the characteristics of the small sample of Mr. Bolan's ratings changes. However, the findings in this section in the small sample limited to his ratings changes are consistent with the idea that trading ahead of analyst ratings changes is a strategy that gives a trader an unfair advantage.

V. Market Trading Volume Increased in the Stocks That Are the Subject of Mr. Bolan's Ratings Changes

In the preceding section, I examined how the prices of the stocks moved in response to a ratings change. I found that the prices tended to move in the expected direction: up for an upgrade, down for a downgrade. A second way to determine whether Mr. Bolan's ratings changes may have contained important information is to look at whether trading volume in the stocks increased when the announcements were made. More trading suggests that new information has been released and that traders are re-adjusting their holdings in response to the new information. In order to identify increased trading on the ratings announcement days, I compared the trading volume on those days to the average trading on days surrounding the announcements. I found that the trading volume increased by over 60% in the stocks for which Bolan published a ratings change.

Higher than normal volume on the ratings change announcement days is indicative that the market attaches significance to the ratings change and therefore trades more intensely in days on which there is a ratings change. In order to determine whether the volume was higher than normal, I first found the average trading volume for each of the ten stocks with clean announcements in the 30 days surrounding the announcement (15 days before to 15 days after). I then divided the trading on each day for each stock by the average

for that stock over the 31-day period. The resulting series for each stock will have an average of 1.0. Any day with a ratio above 1.0 indicates a higher than normal trading day. For the ten clean announcements, the average trading ratio was 1.63 on the day of the announcements. The interpretation is that on the day of the announcement the volume was approximately 63% higher than the average volume in the days immediately before and immediately after.

I performed a statistical difference of means test to determine if the ratio on the announcement days is higher than the ratio on non-announcement days. The difference of means tests yields a test statistic that is 3.45 which is significant at the 1% level. I am 99% confident that trading increases on days where Mr. Bolan was releasing his ratings changes. This finding indicates that the stock market reacts to Mr. Bolan's ratings changes with increased trading in the stock when the change is announced. The market interprets the ratings change as material information.

VI. Mr. Ruggieri Did Not Typically Hold Overnight Positions in the Stocks He Traded

After having examined the market reaction to Mr. Bolan's ratings change announcements, I next set out to analyze Mr. Ruggieri's trading. In order for Mr. Ruggieri to have profited off of his advance knowledge of the ratings changes, he had to hold an overnight position in the rated stocks. An overnight position was necessary because all six of the ratings change announcements came out after the stock market was closed. In order to profit on the stock price reaction the following day, Mr. Ruggieri would have had to buy the stock before the stock market closed on the previous day and held it at least until the following morning. The first question I answer is "what percentage of Mr. Ruggieri's trading involved holding overnight positions?" The answer is less than 2%. Mr. Ruggieri infrequently held his positions overnight, so the six specific trades identified by the SEC which were held overnight are different from his typical trades.

I have analyzed the trading records of Mr. Ruggieri over the period March 30, 2010 through March 31, 2011. Mr. Ruggieri primarily placed trades that were closed out before the end of the trading day. Over this period, Mr. Ruggieri placed long or short

positions that totaled 289,910,241 shares. The positions represented by 285,827,076 of these shares were closed out the same day they were originally placed. The positions represented by 4,083,165 shares were held overnight. Mr. Ruggieri therefore held only 1.41% of his trades overnight if we measure the trades by the number of shares.

I also analyzed the trading by dollar amount. Over the period March 30, 2010 through March 31, 2011, Mr. Ruggieri placed trades that totaled \$6.11 billion. Of these trades, \$88.9 million in positions were held overnight. This represents 1.45% of all trades when measured by dollar amount.

On all six trades (100%) at issue in this case Mr. Ruggieri held the positions overnight. Only a small fraction (1.4%) of Mr. Ruggieri's trades was generally held overnight. The vast majority were closed out the same day they were placed.

VII. Mr. Ruggieri's Overnight Positions around the Six Ratings Changes Is Not Due to Chance

I have considered the possibility that Mr. Ruggieri may have held overnight positions in the six stocks with ratings changes simply by chance. Since Mr. Ruggieri traded primarily in the health care industry and Mr. Bolan was an analyst in the health care industry, it is theoretically possible that through the normal course of trading Mr. Ruggieri might take an overnight position in a stock that was coincidentally covered by a research report released by Mr. Bolan. In order to test this possibility, I examined the days on which Mr. Bolan released a research report that did *not* contain a ratings change. Mr. Ruggieri's trading around those releases is fundamentally and statistically different from his trading around Mr. Bolan's reports that *did* contain a ratings change. This finding is strong evidence that Mr. Ruggieri strategically traded in anticipation of Mr. Bolan's ratings changes and that these trades were not due to chance.

I examined all of the research reports issued by Mr. Bolan over the period March 30, 2010 through March 31, 2011. I found a total of 190 separate research reports covering a total of 204 stocks (some of the reports cover multiple stocks). Most of Bolan's research reports simply confirmed the rating on the covered stock rather than changing the rating. Of these 204 reports, six are the ratings changes at issue in this case. In addition to the ratings

changes at issue in this case, there were two other research reports that contain ratings changes. Therefore the total number of research reports with ratings changes is eight out of the 204 research reports issued by Bolan.

By examining all instances where Mr. Bolan released a research report on stocks in the industry, I can see how often Mr. Ruggieri just happened to be holding an overnight position in stocks on the days which Mr. Bolan released a report on those stocks.

There were 204 stocks on which a report was released by Mr. Bolan. In 14 of those cases, Mr. Ruggieri built a position in the stock the day before the research report and liquidated it the day after the research report. If I assume that the overnight positions that Mr. Ruggieri took were not influenced by Mr. Bolan's research reports and happened simply by chance, then the 14 out of 204 represent the percentage of time that Mr. Ruggieri was simply trading overnight in those stocks by chance.¹¹ That is, 6.8% (14 divided by 204) of the time, Mr. Ruggieri held an overnight position in a stock covered by a research report released by Mr. Bolan. This turns out to be approximately 1 out of every 15 times that Bolan releases a research report, Mr. Ruggieri had an overnight position in the stock.

If I confine the reports to just those involving ratings changes, I would expect approximately the same likelihood if it is just a matter of chance. In other words 1 out of 15 times Mr. Bolan publishes a ratings change, I would expect Ruggieri to hold an overnight position if it was simply a chance occurrence. In actuality, Mr. Ruggieri built an overnight position in 6 out of 8 of the ratings change announcements, which is 75% of the time. If it were simply a matter of chance, I would expect to observe approximately 1 out of 15. Instead I see 6 out of 8.

The likelihood of observing Mr. Ruggieri holding overnight positions in 75% of eight particular research reports simply by chance when the likelihood of that happening by chance on any particular report date is 6.8% is, for all practical purposes, zero. A binomial test observing 6 out of 8 overnight trades when the probability of an overnight trade is 6.8% yields a p-value of .000002. This means that the probability is .0002% that I would see 6 or more out of 8 trades being held overnight if it was simply by chance. This evidence causes

¹¹ I have assumed that none of the trades were influenced by the release of research reports by Mr. Bolan. If there was evidence that some of his trades were in response to the research reports, it would reduce the percentage that was simply by chance. This in turn would make the findings in this section even stronger.

me to draw a very strong conclusion that the overnight positions in the stocks with ratings changes are NOT simply by chance.¹² I strongly reject the explanation, if it is given, that the six trades represented just chance occurrences.

Seven of the ratings changes in the research reports came out after the market closed. The eighth ratings change was released during the trading day. Because this ratings change (the ticker symbol is MDAS and the ratings change was released on January 5, 2011 at approximately 10:20 am) was released during the trading day, capitalizing on the ratings change would not have required an overnight position and so does not lend itself to the same analysis of overnight trading that I discussed earlier in this report. However, it is interesting to know that Mr. Ruggieri actually built a position in MDAS within an hour of the release of Mr. Bolan's ratings change at 10:20 and then drew down that position before the end of that trading day. So my analysis in the paragraph above actually understates the frequency with which Mr. Ruggieri had positions in place when Mr. Bolan's ratings change was released. In fact, it was seven out of eight times rather than six out of eight. Six out of eight times he held an overnight position and, in the seventh, the position was not held overnight but was put in place immediately before the ratings change and unwound the same day. Counting the trading on MDAS as a holding which capitalized on a ratings change, 88% of the time that Mr. Bolan released a ratings change within this one-year period, Mr. Ruggieri's portfolio was constructed to capture the stock price reaction.

This report is respectfully submitted in this matter,



2/17/2015

Edward S. O'Neal, PhD

¹² Note that I draw this conclusion simply based on the trading and research report data.

Appendix 1. Materials Relied Upon

1. Order Instituting Administrative and Cease-and-Desist Proceedings against Gregory T. Bolan, Jr. and Joseph C. Ruggieri
2. Kent Womack, “Do brokerage analysts’ recommendations have investment value?” *Journal of Finance* 51, pp. 137-167 (1996).
3. T.C. Green, “The value of client access to analyst recommendations” *Journal of Financial and Quantitative Analysis* 41, pp. 1 – 24 (2006).
4. Alon Brav and Reuven Lehavy, “An empirical analysis of analysts’ target prices: short-term informativeness and long-term dynamics” *Journal of Finance* 53, pp. 1933 – 1967 (2003).
5. Oya Altinkilic and Robert Hansen, “On the information role of stock recommendation revisions” *Journal of Accounting and Economics* 48, pp. 17-36 (2009).
6. Daniel Bradley, Jonathan Clarke, Suzanne Lee, and Chayawat Ornthanalai, “Are analyst recommendations informative? Intraday Evidence on the impact of time stamp delays” *Journal of Finance* 69, pp. 645-673 (2014).
7. Stephen J. Brown and Jerold B. Warner, “Measuring Security Price Performance” *Journal of Financial Economics* 1980 pp. 205-258
8. Stephen J. Brown and Jerold B. Warner, “Using Daily Stock Returns: The Case of Event Studies” *Journal of Financial Economics* 1985 pp. 3-31
9. Mark P. Kritzman, “What Practitioners Need to Know About Event Studies” *Financial Analysts Journal* November-December 1994 pp. 17-20
10. Mark L. Mitchell and Jeffrey M. Netter, “The Role of Financial Economists in Securities Fraud Cases: Applications at the Securities and Exchange Commission” *The Business Lawyer* February 1994 pp. 545-590.
11. List of Mr. Bolan’s research reports from September 16, 2008 – April 25, 2011 (WF-00284305)
12. Various research reports listed in WF – 00284305
13. Bloomberg – company-specific news around Mr. Bolan’s 18 ratings changes
14. Bloomberg – NASDAQ Composite index levels, NASDAQ Health Services index levels, stock returns and trading volume for individual securities of interest
15. Mr. Ruggieri’s trading activity from March 30, 2010 –March 31, 2011 (WF-002847663 through WF-002847678, WF-002848306)
16. Analyst reports produced by respondents to the Division published around the date of each ratings change listed in Table 1 of this expert report, and referencing the subject of the ratings change, and published by the following:
 - a. Baird
 - b. William Blair
 - c. Goldman Sachs
 - d. J.P.Morgan
 - e. Lazard
 - f. Leerink Swann
 - g. Piper Jaffray
 - h. Bank of America

- i. Deutsche Bank
- j. Jefferies
- k. UBS
- l. Raymond James
- m. Barclays
- n. Citi
- o. Morgan Stanley

Appendix 2: CV of Edward S. O'Neal, Ph.D.

Professional Experience

SECURITIES LITIGATION AND CONSULTING GROUP, INC.

2007 - Present *Principal*

Provides expert consulting and testifying in investment management and valuation disputes.

ACADEMIC WEALTH MANAGEMENT, A REGISTERED INVESTMENT ADVISOR

2003 - 2007 *Principal*

WAKE FOREST UNIVERSITY, WINSTON-SALEM, NC

2000 - 2007 *Assistant Professor of Finance*

MBA courses taught:

Investments and Portfolio Management

Applied Security Analysis

Corporate Finance

Additional responsibility:

Make final portfolio decisions for the Wachovia Securities Fund, a part of the Wake Forest University Endowment.

AUBURN UNIVERSITY, AUBURN, AL

1998-2000 *Assistant Professor of Finance*

Taught MBA and Undergraduate courses in Investments and Portfolio Management

U.S. SECURITIES AND EXCHANGE COMMISSION

1997-1998 *Senior Research Economist*

Worked in the office of economic analysis providing support and expertise on mutual fund and investment management regulatory issues. Provided analysis to facilitate enforcement actions.

UNIVERSITY OF NEW HAMPSHIRE

1993-1997 *Assistant Professor of Finance*

Taught MBA and Undergraduate courses in Investments and Portfolio Management, Corporate Finance, and Financial Institutions

Education

UNIVERSITY OF FLORIDA, GAINESVILLE

1993 Ph.D. Finance

AUBURN UNIVERSITY, AUBURN, AL

1989 Master of Business Administration

NC STATE UNIVERSITY, RALEIGH, NC

1986 B.S. Electrical Engineering

Publications and Working Papers

“Private Placement Real Estate Valuation,” with Tim Husson, Craig McCann, and Carmen Taveras, forthcoming in *The Journal of Business Valuation and Economic Loss Analysis*, 2014.

“Large Sample Valuations of Tenancies-in-Common,” with Tim Husson, Craig McCann, and Carmen Taveras, 2013, available at www.slcg.com.

“Commodities ETFs,” with Ilan Guedj, Guohua Li and Craig McCann, 2010, available at www.slcg.com.

“Charles Schwab YieldPlus,” with Geng Deng, Ilan Guedj and Craig McCann, 2010, available at www.slcg.com.

“What TiVo and JP Morgan teach us about Reverse Convertibles,” with Geng Deng, Ilan Guedj, Guohua Li, Sherry Liu, Joshua Mallett, Craig McCann, 2010, available at www.slcg.com.

“The Risks of Preferred Stock Portfolios,” with Ilan Guedj, Guohua Li and Craig McCann, 2010, available at www.slcg.com.

“Auction Rate Securities,” with Craig McCann, 2010, available at www.slcg.com.

“What does a Mutual Fund’s Term Tell Investors?,” with Geng Deng and Craig McCann, *Journal of Investing*, Summer 2011.

“What does a Mutual Fund’s Average Credit Quality Tell Investors?,” with Geng Deng and Craig McCann, *Journal of Investing*, Winter 2010.

“Window Dressing in Bond Mutual Funds,” with Matthew Morey, *Journal of Financial Research*, Summer, 2006.

“Institutional Management Fees,” with Sherry Jarrell, *Journal of Investment Management*, First Quarter, 2004.

“Purchase and Redemption Patterns of US Equity Mutual Funds,” *Financial Management*, Spring, 2004.

“Utility Sector Mutual Funds: Performance and Dividend Policy Implications,” with Daniel Page, *Managerial Finance*, volume 28:12, 2002.

“Which Alternative Asset Class? The diversification merits of high-yield debt, emerging market equity, and real estate,” with L. Franklin Fant, *Journal of Investing*, Winter, 2001.

“Industry Momentum and Sector Mutual Funds,” *Financial Analysts Journal*, July-August, 2000.

“Temporal Changes in the Determinants of Mutual Fund Flows,” with L. Franklin Fant, *Journal of Financial Research*, Summer, 2000.

“Real Estate Mutual Funds: Abnormal Performance and Fund Characteristics,” with Daniel Page, *Journal of Real Estate Portfolio Management*, July-September, 2000.

“Mutual Fund Share Classes and Broker Incentives,” *Financial Analysts Journal*, September-October, 1999.

“Do You Need More than One Manager for a Given Equity Style? *Evidence from Mutual Funds*” with L. Franklin Fant, *Journal of Portfolio Management*, Summer, 1999.

“The Cost of Mutual Fund Distribution Fees,” with Miles Livingston, *Journal of Financial Research*, Summer, 1998.

“The Cost of Market versus Regulatory Discipline in Banking,” with Matthew Billett and Jon Garfinkel, *Journal of Financial Economics*, June, 1998. Reprinted in *The Regulation and Supervision of Banks*, M.J.B. Hall, ed., Edward Elgar Publishing, Inc., Northampton, MA.

“Why Electric Utility Stocks are Sensitive to Interest Rates,” *Financial Review*, February, 1998.

“How Many Mutual Funds Constitute a Diversified Mutual Fund Portfolio?,” *Financial Analysts Journal*, March-April, 1997.

“Mutual Fund Brokerage Commissions,” with Miles Livingston, *Journal of Financial Research*, Summer, 1996.

Honors and Awards

2002 Southern Finance Association Outstanding Paper in Investments Award for “Window Dressing in Bond Mutual Funds,” with Matthew Morey.

1997-98 Securities and Exchange Commission Visiting Economic Fellowship.

The 1997 University of New Hampshire Whittemore School of Business and Economics Excellence in Teaching Award.

1995 Eastern Finance Association Outstanding Paper in Investments Award for “Mutual Fund Brokerage Commissions,” with Miles Livingston.

Research Referenced in

Wall Street Journal (11/3/95, 9/9/97, 4/6/98, 2/5/02, 3/5/03, 7/2/03, 3/17/04, 4/1/04, 7/14/04)

Barron's (4/21/97), *San Francisco Chronicle* (12/31/03), *Newsweek Magazine* (2/16/04)
Chicago Tribune (5/18/97), *Baltimore Sun* (12/21/03), *Washington Post* (3/20/04, 7/4/04)

Los Angeles Times (7/15/97, 1/24/04), *Chicago Sun-Times* (2/2/04)

Wall Street Journal Report (television appearance, 10/18/97)

Alabama at Work on Alabama Public Television (television appearances, 11/13/98, 11/20/98, 8/29/99)

Mutual Fund Market News (12/12/02, 3/10/03), *Money Management Executive* (2/2/04)

Consumer Reports Money Adviser (6/03)

USA Today (1/23/04)

Testimony and Expert Reports – Court cases and selected Arbitration Cases

Trial testimony in *Brosnan and Ors v. Katke and Ors*, Federal Court of Australia, Brisbane, August 2014 on valuation of U.S. specialty pharmaceutical companies.

Deposition testimony in *Helmut F. Porkert v. Ayco*, US District Court, District of South Carolina, Beaufort Division, March 2013 on executive stock option valuation, fiduciary duties of a registered investment advisor, and damages.

Direct and cross examination in *Securities and Exchange Commission v. Michael Ferrer et.al.*, SEC Administrative Proceeding, December 2012 on closed end fund mispricing and damages.

Deposition testimony in *Carol B. Curran et al. v. AGL Life Assurance Company et al.*, District Court for Boulder County, Colorado, December 2012, on hedge funds.

Deposition testimony in *Peoples State Bank v. Stifel Nicolaus and Company Inc. et al.*, US District Court, Southern District of Indiana, Indianapolis Division, June 2012, on auction rate securities.

Deposition testimony in *AnchorBank et al. v. Clark Hofer*, U.S. District Court, Western District of Wisconsin, May 2012, on market manipulation, dilution and damages.

Deposition testimony in *Dispatch Printing Company et al. v. National City Corporation*, The Court of Common Pleas of Franklin County, Ohio, May 2012, on stock price inflation, fraudulent earnings and event study methodology.

Deposition and rebuttal testimony In *RE Evergreen Ultra Short Opportunities Fund Securities Litigation*, U.S. District Court, District of Massachusetts, November 2011 and February 2012, on bond mutual fund investments, duration and naming conventions.

Deposition testimony in *re Nuveen Funds/City of Alameda Securities Litigation*, US District Court, Northern District of California, San Francisco Division, November 2010 on risk and damages associated with Municipal Bond issuance.

Direct and cross examination in *Knell v. Citigroup*, FINRA Arbitration Panel, August 2010 on preferred securities.

Deposition testimony in *Securities and Exchange Commission v. Symbol Technologies, et al.*, U.S. District Court, Eastern District of New York, April 2010, on stock price inflation, fraudulent earnings reports and wrongful gains on option transactions.

Direct and cross examination in *Fowler v. Morgan Keegan and Company.*, FINRA Arbitration Panel, April 2010 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *Carmichael v. Merrill Lynch, et al.*, FINRA Arbitration Panel, March 2010 on preferred securities.

Direct and cross examination in *Green v. UBS*, FINRA Arbitration Panel, March 2010 on preferred securities.

Direct and cross examination in *Lee v. Morgan Keegan and Company.*, FINRA Arbitration Panel, March 2010 on preferred securities.

Direct and cross examination in *Wade v. Morgan Keegan and Company.*, FINRA Arbitration Panel, November 2009 on closed end fund risk, high yield securities and structured finance.

Deposition testimony in *Helmut F. Porkert v. Chevron Corporation.*, US District Court, District of South Carolina, Beaufort Division, May 2009 on executive stock option valuation.

Direct and cross examination in *Almas Temple v. M & T Bank.*, FINRA Arbitration Panel, September 2009 on portfolio risk and damages.

Direct and cross examination in *Canale v. Morgan Keegan and Company.*, FINRA Arbitration Panel, June 2009 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *UPM v. Morgan Keegan and Company.*, FINRA Arbitration Panel, June 2009 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *Ruch v. Morgan Keegan and Company.*, FINRA Arbitration Panel, June 2009 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *Klosky v. Morgan Keegan and Company.*, FINRA Arbitration Panel, April 2009 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *Hough v. Morgan Keegan and Company.*, FINRA Arbitration Panel, April 2009 on closed end fund risk, high yield securities and structured finance.

Direct and cross examination in *Muhlbauer v. Morgan Keegan and Company.*, FINRA Arbitration Panel, March 2009 on closed end fund risk, high yield securities and structured finance.

Trial and Deposition testimony in *Re American Funds Mutual Fund Fee Litigation.*, US District Court, Central District of California, Western Division, 2009 on economies of scale and 12b-1 fees in mutual fund management.

Deposition testimony in *City of Coral Gables Retirement System v. UBS Financial Services, et al.*, Circuit Court of the 11th Judicial Circuit, Miami – Dade County, Florida, March 2009, on portfolio risk and return.

Direct and cross examination in *Kopel v. Morgan Keegan and Company.*, FINRA Arbitration Panel, February 2009 on closed end fund risk and structured finance.

Direct and cross examination in *Goldstein v. Emmett Larkin, Inc.*, FINRA Arbitration Panel, December 2008 on suitability and portfolio risk.

Deposition Testimony and Expert report in *Charles Fisher, et al v. ABB Inc.*, U.S. District Court, Western District of Missouri, November 2008, on 401(k) plan design.

Deposition Testimony and Expert report in *Beaseley, et al v. International Paper Company*, U.S. District Court, Southern District of Illinois, October 2008, on 401(k) plan design.

Deposition Testimony and Expert report in *Anthony Abbott, et al v. Lockheed Martin Corporation*, U.S. District Court, Southern District of Illinois, September 2008, on 401(k) plan design.

Deposition Testimony and Expert report in *Beverly Kanawi, et al v. Bechtel Corporation*, U.S. District Court, Northern District of California, San Francisco Division, September 2008, on 401(k) plan design.

Deposition Testimony and Expert report in *RE Mutual Funds Investment Litigation, RS Funds Sub-track*, U.S. District Court, District of Maryland, June 2008, on mutual fund market timing.

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Deposition Testimony and Expert report in *RE Mutual Funds Investment Litigation, Scudder Sub-track*, U.S. District Court, District of Maryland, May 2008, on mutual fund market timing.

Deposition Testimony and Expert report in *Gary Spano, et al v. The Boeing Company, et al.*, U.S. District Court, Southern District of Illinois, April 2008 and December 2007, on mutual fund selection for employee benefits plans.

Deposition Testimony and Expert report in *David S. Taylor, et al v. United Technologies Corporation*, U.S. District Court, District of Connecticut, December 2007, on excessive fees charged to 401(k) plan participants.

Expert Report in *Securities and Exchange Commission v. Mitchell Drucker, et al.*, U.S. District Court, Southern District of New York, November 2007, on insider trading.

Deposition Testimony and Expert report in *Dennis Hecker, et al v. Deere and Company, Fidelity Management Trust Company and Fidelity Management and Research Company*, U.S. District Court, Western District of Wisconsin, June 2007, on excessive fees charged to 401(k) plan participants.

Deposition testimony in *Susan Strigliabotti, et al. v. Franklin Resources, Inc. et al.*, U.S. District Court, Northern District of California, May 2007 on economies of scale and excessive fees in mutual fund management.

Deposition testimony in *Nicholas M. and Ann R. Salerno v. Merrill Lynch, Pierce, Fenner, and Smith, Inc.*, State Court of South Carolina, February 2007 on suitability and risk analysis.

Deposition testimony in *John Gallus, et al. v. Ameriprise Financial, Inc. (F/K/A American Express Financial Corp) et al.*, US District Court, District of Minnesota, January 2007 on economies of scale, excessive fees and 12b-1 fees in mutual fund management.

Deposition testimony in *Gerard Boekman, et al. v. A.G. Edwards, Inc.*, US District Court, Southern District of Illinois, December 2006 on excessive fees charged to 401(k) plan participants.

Direct and cross examination in *Schunmann v. Sova*, NASD Arbitration Panel, September 12, 2006 on portfolio risk, diversification, fiduciary responsibility of an RIA.

Deposition testimony in *Walter Sins, et al. v. Janus Capital Management, LLC, et al.*, and *Michael Fleisher, v. Janus Capital Management, LLC, et al.*, US District Court, District of Colorado, August 2006 on economies of scale and excessive fees in mutual fund management.

Deposition testimony in *Jerry N. Jones, et al. v. Harris Associates, L.P.*, US District Court, Northern District of Illinois, Eastern Division, May 2006 on economies of scale and excessive fees in mutual fund management.

Deposition and rebuttal deposition testimony in *Barbara D. Williams, et al. v. Waddell and Reed Investment Management Company et al.*, US District Court, Western District of Missouri, Central Division, March and July 2006 on economies of scale, excessive fees, and 12b-1 fees in mutual fund management.

Deposition and rebuttal deposition testimony in *Robert Baker, et al. v. American Century Investment Management, Inc. and American Century Investment Services, Inc.*, US District Court, Western District of Missouri, Central Division, December, 2005 and March, 2006 on economies of scale in mutual fund management.

Direct and cross examination in *Barwise v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, January 10, 2006 on suitability and portfolio risk.

Direct and cross examination in *Sprague, et. al. v. Morgan Stanley Dean Witter Inc.*, NASD Arbitration Panel, November 14, 2005 on suitability and mutual fund share classes.

Direct and cross examination in *CCJ Partnership v. Goldman Sachs.*, AAA Arbitration Panel, October 18, 2005 on suitability, portfolio management and risk analysis.

Direct and cross examination in *Sischo v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, September 20, 2005 on suitability and portfolio risk.

Direct and cross examination in *Lescroart v. Goldman Sachs.*, NASD Arbitration Panel, May 17, 2005 on suitability.

Direct and cross examination in *Smart v. Morgan Stanley Dean Witter Inc.*, NASD Arbitration Panel, May 10, 2005 on suitability.

Direct and cross examination in *Andrzejewski. v. Morgan Stanley Dean Witter Inc.*, NASD Arbitration Panel, April 20, 2005 on suitability.

Direct and cross examination in *Lambert. v. Southwest Securities Inc.*, NASD Arbitration Panel, April 7, 2005 on suitability.

Direct and cross examination in *Joanne Desrosiers et. al. v. Robert W. Baird, Inc.*, NASD Arbitration Panel, March 29, 2005 on portfolio risk.

Direct and cross examination in *Bernard Friesmuth v. Prudential Equity Group, LLC.*, NASD Arbitration Panel, March 15, 2005 on portfolio risk.

Direct and cross examination in *Mary Jane Schwartz v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, December 7, 2004 on suitability and excessive trading.

Direct and cross examination in *Wormser v. Salomon Smith Barney*, NASD Arbitration Panel, November 16, 2004 on suitability.

Direct and cross examination in *Rooney v. Wachovia Securities*, NASD Arbitration Panel, November 4, 2004 on misuse of B-share mutual funds.

Direct and cross examination in *O'Leary v. Scott and Stringfellow*, NASD Arbitration Panel, September 29, 2004 on suitability.

Direct and cross examination in *Henrietta Bennett v. Wachovia Securities*, NASD Arbitration Panel, August 30, 2004 on suitability.

Deposition testimony in *Annie Hyde Johnson, Linda D. Johnson and Mary Anne Howland v. John Hancock Funds, LLC, et al.*, Chancery Court for Davidson County, Tennessee, August 2004 on suitability and misuse of B-share mutual funds.

Direct and cross examination in *Henson. v. Morgan Stanley Dean Witter Inc.*, NASD Arbitration Panel, July 28, 2004 on suitability and improper sale of Class B mutual funds.

Direct and cross examination in *Glen and Krista Hansen v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, July 13, 2004 on suitability.

Direct and cross examination in *Michael Brim v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, June 17, 2004 on suitability.

Direct and cross examination in *Tena Collins v. Credit Suisse Asset Management*, AAA Arbitration Panel, April 16, 2004 on exchange funds.

Direct and cross examination in *Teshame Bokan v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, March 16, 2004 on suitability.

Direct and cross examination in *Erik Corritt v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, February 2, 2004 on suitability and excessive trading.

Direct and cross examination in *Jorge Karpati and Ana Maria Davies v. Merrill Lynch, Pierce, Fenner and Smith, Inc.*, NASD Arbitration Panel, January 19, 2004 on suitability.

Direct and cross examination in *Alvin L. Starks v. Prudential Securities Inc.*, NASD Arbitration Panel, December 17, 2003 on suitability.

Direct and cross examination in *Securities and Exchange Commission v. IFG Network Securities, Inc. et.al.*, SEC Administrative Proceeding, November 18-19, 2003 on improper sale of Class B mutual funds.

Direct and cross examination in *Edwin Kornblue, D.D.S., P.A., et al. v. Morgan Stanley Dean Witter Inc.*, NASD Arbitration Panel, November 4, 2003 on suitability and improper sale of Class B mutual funds.

Direct and cross examination in *Marjorie Alberg v. Morgan Stanley Dean Witter.*, NYSE Arbitration Panel, September 4, 2003 on suitability.

Direct and cross examination in *Annette Adams v. Salomon Smith Barney Inc.*, NYSE Arbitration Panel, April 30, 2003 on suitability.

Direct and cross examination in *Paul Winer and Freight Express. v. GBI Capital Partners*, NASD Arbitration Panel, March 12, 2003 on excessive trading and suitability.

Direct and cross examination in *Linda Bokor, et. al. v. Summit Equities, et. al.*, NASD Arbitration Panel, February 11, 2003 on suitability.

Direct and cross examination in *Robert and Elaine Johnson v. Morgan Stanley Dean Witter and Mr. Riley Hughes* NASD Arbitration Panel, September 24, 2002 on suitability.

Direct and cross examination in *Taylor v. National Securities, Inc., et. al.* NASD Arbitration Panel, October 14, 2001 on excessive trading and suitability.

Expert report in *Allison Hines, et. al vs. ESC Strategic Funds and SunTrust Equitable Securities Corporation*, U.S. District Court, Middle District of Tennessee, Nashville Division, May 16, 2000 on breach of fiduciary duty by mutual fund directors.

August 2014