Trends in Pro Forma reporting during the Great Recession

Dakota W. Mivshek
Claremont McKenna College

Recommended Citation
http://scholarship.claremont.edu/cmc_theses/683
CLAREMONT McKENNA COLLEGE

TRENDS IN PRO FORMA REPORTING DURING THE GREAT RECESSION

SUBMITTED TO
PROFESSOR MATTHEW MAGILKE
AND
DEAN GREGORY HESS
BY
DAKOTA W. MIVSHEK

FOR
SENIOR THESIS
SPRING 2013
APRIL 29, 2013
Acknowledgements

First and foremost, I would like to thank Professor Magilke for all his help throughout the course of this study. He was kind enough to be my advisor although he was on sabbatical for the semester. Without his help in developing a topic and advising me along the way, the study would not have gone so well. I would also like to thank Professor Batta for his help. We did not meet during the semester while conducting this study, but he helped me immensely in finding a topic to work with during my fall semester. I would also like to extend a huge thank you to Professor Antecol. As my Econ 180 teacher she went above and beyond in editing my thesis, and providing much needed help along the way. Finally, I would like to thank my family and friends for all their support during my long journey from Colorado, to Phillips Exeter, to the University of Portland, and ultimately, the best college in the nation, Claremont McKenna College. Without all the great people in my life, my experience would not have been the same.

Thank You.
Contents
Abstract ................................................................................................................................. 5
1. Introduction .......................................................................................................................... 6
2. Background ............................................................................................................................ 8
3. Literature Review ................................................................................................................ 11
4. Data .................................................................................................................................... 16
5. Methodological Approach and Results ............................................................................. 18
   5.1 Hypothesis 1: Proportion of Disclosers ........................................................................ 18
   5.2 Hypothesis 2: Magnitudes of Disclosers ...................................................................... 22
   5.3 Hypothesis 3: Drivers Behind Magnitudes .................................................................... 25
6. Conclusion ............................................................................................................................ 31
Appendix .................................................................................................................................. 33
Tables ...................................................................................................................................... 34
Tables ...................................................................................................................................... 35
References ............................................................................................................................... 38
Abstract

Pro forma EPS reporting is a fairly new accounting disclosure; it has since been modified in 2003 by the U.S. Securities and Exchange Commission, to include additional disclosure and filing requirements. This “Regulation G” has been around for nearly a decade and since that time a major financial crises in the United States has occurred. This study attempts to analyze trends in pro forma EPS reporting within the S & P 500 constituents during the Great Recession, and speculate as to whether earnings management was apparent. This study provides evidence that there was a significant increase in the proportion of pro forma disclosers and magnitudes of those disclosers. Results also indicate that the presence of negative earnings and intangibles have a significant effect on the magnitude of these differences and that there appears to be a level of consistency in pro forma reporting among firms. Results allude to the possibility of short term and long term earnings management strategies during the Great recession among S & P 500 constituents.
1. Introduction

The purpose of this study is to add to the existing literature by looking at the effects the Great Recession had on pro-forma numbers and to speculate what may explain the trends seen in the results. For over two decades, an ongoing debate between two different profitability reporting measures, GAAP and “pro-forma”, has raged on. Pro forma earnings became a platform for companies to recast earnings to portray to investors a reported measure that more closely identified “core” earnings that they expected to carry on through the future.\(^1\) Over time, security analysts, investors, in addition to the press have increasingly been relying on these pro forma earnings to base decisions. However, the increasing gap between GAAP EPS and pro forma EPS has become a subtle form of earnings management\(^2\).

When the dot-com bubble burst, companies such as Enron were prime examples of the risks investors faced in observing pro forma earnings. Enron showed a much healthier financial picture via deceitful reconciliation of pro forma figures. Enron was the catalyst that forced the SEC to step in and implement regulations to protect investors from companies wrongly increasing earnings via pro-forma announcements. In 2002, in conjunction with Sarbanes-Oxley, Regulation G was passed that forced companies to clearly show how they got to their pro-forma number. Research that was conducted post-regulation show a decrease in shady pro-forma announcements; however, it is clear that companies are continuing to find ways around regulations to mislead investors. It has


been over a decade since regulation G was put in place. To the best of my knowledge, previous studies have not looked at trends in pro forma figures during tough economic times.

This study provides evidence that there was a significant increase in the proportion of pro forma disclosers and the magnitudes of those disclosers, as well as, results indicating that the presence of negative earnings and intangibles have a significant effect on the magnitude of these differences seen between pro forma and GAAP.

This study contributes to the current literature in several ways. In particular, since the proliferation of pro forma earnings, three US economic recessions have occurred, and no study has specifically looked at pro forma trends during these times. Pro forma earnings were rare and fairly new during the early 1990s economic downturn, and the regulations put in place during the economic recession of the early 2000s may have curbed any trends that existed. The recent Great Recession provides a setting far enough removed from Regulation G to observe possible earnings manipulation via pro forma announcements. This study also contributes to literature related to the Sarbanes-Oxley Act, and the lasting effects of Regulation G.

My results point to the importance of reminding financial statement users of the tricky details that lie within footnotes, which can be so easily overlooked. My results suggest that the pressures of economic decline may be a catalyst to bring managers back to their bad habits of opportunistic behavior, and my study opens up more room for future research to dive deeper.

The remainder of the study is as follows: Sections 2 and 3 present a brief background to the pro forma debate and prior literature on the topic, respectively. Section
4 describes the data. The methodology and results are presented in Section 5. The final section concludes.

2. Background

Pro-forma, or “street earnings”, became relevant in the early 1990s as many dot-com companies began to adjust their audited GAAP earnings for items they deemed to be “unusual” or “non-recurring” and irrelevant to their “core” earnings. In many cases “street” earnings do illustrate a clearer picture of the actual earnings potential of a company. Companies must adhere to GAAP which enforces much stricter rules when reporting earnings. The idea behind pro forma is to allow companies to exclude some non-cash or one-time cash expenses such as depreciation, goodwill, amortization, restructuring, merger costs, stock based employee pay, and other transitory items that would help investors see the true operating potential.

However, over time, understanding what went on to arrive at pro forma earnings became hazier. SEC chairman Harvey Pitt was often outspoken about the pro forma practice, complaining that there is no comparability, therefore no investor, especially an ordinary investor can read these in a way that is useful.\(^3\) Leading up to the dot-com bubble burst in the early 2000s, research was beginning to indicate that managers were using pro forma earnings opportunistically. In 1992, within the S&P 500, only 31 companies reported any pro forma earnings that differed from GAAP; by 1999 more than

---

half had played the pro forma game. The difference between GAAP and pro forma hit an all-time high during 2001.

The early 2000s marked a slowdown in the US economy. The unregulated pro forma practice allowed companies to try and avoid reporting bad earnings. In the two weeks ending September 7, 2001, the Nasdaq lost 12 percent and this collapse was blamed, in part, on the inflated valuation based on accounting smoke and mirrors. Despite the critics and the lack of comparability, pro forma was here to stay. As Liesman and Weil reported, “pro forma is the profitability figure most widely watched by Wall Street analysts and many investors; when a company announces earnings that meet or beat ‘the street’ it tends to be a significant factor in moving the stock price.”

It was becoming clear that regulation was needed.

In response to the exploitation of non-GAAP reporting, the Securities and Exchange Commission (SEC) included in the Sarbanes-Oxley Act of 2002, Section 401 (b); commonly referred to as Regulation G. This new rule, which went into effect in March 2003, required that: (1) a pro forma report cannot omit any information that would make the report in any way misleading to investors, and (2) a pro forma announcement must provide a complete reconciliation between the pro forma figure and the GAAP number. Research conducted in the immediate years following Regulation G indicate that the legislation succeeded, by producing modest declines in frequency as well as

---


magnitudes of pro forma reporting.\textsuperscript{8} On the other hand, to some, the SEC intervention may have caused an unforeseen cost; managers, afraid of scrutiny, are less transparent in terms of informing investors.

Regulation G has been in place for nearly 10 years and several recent empirical studies have attempted to analyze the lasting effects of the legislation. The results have been mixed; while studies have shown that opportunistic behavior is curbed to an extent, managers are becoming more creative with their disclosures, and pro forma vs GAAP differences are once again on the rise.\textsuperscript{9}

This study focuses on the trends in pro forma reporting post-regulation with an emphasis on activity during the Great Recession. Analysis shows, using Benford’s Law\textsuperscript{10} that during recessionary times since 1950, reported financial statement numbers fail to conform to Benford’s Law, indicating increased levels of intentional manipulation.\textsuperscript{11} The intuition is as follows: management faces increased pressure during tough economic times, and that Regulation G may have outlived its initial scare, creating the strong possibility that earnings manipulation is apparent via pro forma earnings announcements during the Great Recession. Moreover, I examine the characteristics of the pro forma reporting firms.

This study analyzes the trends of pro forma reporting by looking at the constituents of the S&P 500 for years 2007-2011. During the early 2000s, the last US

\textsuperscript{8} Heflin, F., Hsu, C., 2005. The impact of the SEC’s regulation of non-GAAP disclosures. Working paper, Florida State University and Purdue University.
\textsuperscript{10} A mathematical law that predicts the frequency of naturally occurring numbers
recession, the difference between GAAP earnings and pro forma earnings reached an all-time high; amounting to nearly a $170 billion dollar earnings gap.¹² Pro forma earnings have not been around long enough to look back on other recessions. Have pro forma earnings once again become a moral hazard? There is a right and wrong way to use pro forma reporting. Whether management has fallen back into the pattern of excluding “all the bad things” and whether these behaviors are intensified during recessionary times is the crux of what is being looked at in this study. If the earnings gap represents a subtle form of earnings management it could have important implications on financial statement users, managers, regulators, and other practitioners.

3. Literature Review

To the best of my knowledge, to date, no literature exists that examines pro forma trends with respect to the latest financial crisis. Prior research tends to focus on pro forma pre/post Regulation G, the usefulness of pro forma reporting, the dangers of pro forma reporting, the characteristics of pro forma reporters, previous trends, as well as, the nature of management behavior and accounting manipulation during recessionary times. These studies, which are discussed in greater detail below, shed light on why this subtle form of accounting manipulation could be more prevalent during recessionary times.

Prior to regulation (pre 2002), pro forma earnings had no accepted definition; therefore, it was difficult to see the purpose of pro forma reporting. However, as stated

earlier, investors primarily looked at pro forma earnings for valuation. Bhattacharya et al. (2003) investigates the relative informativeness and permanence of pro forma earnings. They find, by using short window abnormal returns around earnings announcements, that pro forma earnings are significantly more informative than GAAP earnings with respect to future earnings potential. In a follow-up study, Bhattacharya et al. (2003) conclude that some managers employ these disclosures opportunistically. Doyle et al. (2003) find that some excluded expenses from “street” earnings are predictive of lower future cash flows, indicating that managers falsely classify some recurring expenses as non-recurring expenses. So while it is clear that pro forma earnings are useful to analysts and investors; evidence suggests that pro forma earnings are also a vehicle used by managers to manipulate earnings.

The opportunistic nature of pro forma earnings shows another alarming trend; a disproportionate number of firms that were just meeting or beating analyst earnings forecasts. Evidence leading up to regulation for years 1998-2001, revealed 80 percent of pro forma announcers were meeting or exceeding analyst forecasts, while only 39 percent of these same firms were meeting or exceeding forecasts when using GAAP earnings. The growing complexity and length of 10-Ks were forcing many investors to accept what management was reporting. Although it seemed as though “everyone” is doing it; there is

---

generally a typical pro forma announcer profile. Pro forma announcers tend to be relatively young firms, concentrated in the technology and business services industries. They typically carry more debt, and are significantly less profitable than other firms in their respective industries.\textsuperscript{16} This is the typical profile for pro forma abusers; however, as First Call’s research Chief, Chuck Hill stated in 2002, “It’s snowballing—we’re seeing more and more companies reporting their earnings in numerous different ways, and analysts are going along with it.\textsuperscript{17}”

Prior to regulation, manager recommendations on exclusions were not easy for auditors or analysts to refute because, in most cases, they were not easy to understand. Gu and Chen (2004), find that analysts were fairly skilled in reversing some of the more egregious exclusions brought forth by managers but could not completely unwind or catch other more hidden exclusions. The biggest challenge for auditors and analysts alike is flushing out the exact amount that the exclusion should be. Determining whether an item is recurring or non-recurring is not black and white; professional judgment is typically necessary. Gu and Chen (2004) show that although analysts appear to have the skills to help mediate GAAP and pro forma earnings, it is not a perfect science, and accounting items themselves are hard to classify when it comes to valuation effects moving forward. The most typical exclusions are restructuring charges, acquisitions expenses, and “other” categories. Expenses falling under the umbrella of “other” are especially hard to deconstruct.


As expected, Regulation G provided much needed guidance in helping investors understand the pro forma figure that companies presented. Entwistle et al. (2006) looks at the effects of Regulation G within the scope of the S&P 500. They find from hand collected quarterly releases, the proportion of pro forma announcers dropped from 77 to 54 percent, and the magnitudes are smaller, indicating reporting in a potentially less suspicious way. Heflin and Hsu (2005), who take a broader approach and observe the effects of Regulation G across thousands of firms, find that Regulation G produced “modest” declines in frequency of pro forma announcers, a decline in exclusion magnitude, as well as a decline in the probability that pro forma earnings meet or beat analyst forecasts. These findings indicate a positive effect brought forward by Sarbanes-Oxley; it would appear the managers decreased their opportunistic behavior. Such evidence also helped show that the past (pre-regulation) is littered with opportunistic management behavior.

Regulation G curtailed some opportunistic behavior, but did not provide an answer to solve all problems within the pro forma playing field. One unintended consequence is that the regulations seem to shy companies away from reporting pro forma figures when they would have been most useful.\(^\text{18}\) Regulation G made reconciliation to pro forma figures transparent but also very costly. Some companies elected to only report GAAP earnings when they had special items on their books that would have employed the use of a more useful non-GAAP earnings figure. Aside from scaring companies away, studies in the late 2000s are showing that the effects of

\(^{18}\) Heflin, F., Hsu, C., 2005. The impact of the SEC’s regulation of non-GAAP disclosures. Working paper, Florida State University and Purdue University.
regulation were wearing off. Since Q1 of 2003, income increasing exclusions have been on a steady rise. Other studies show that managers are getting more creative with their exclusions. McVay (2006), finds evidence of more recurring expenses being shifted to other more mysterious accounts such as “other”, or “special items.” The average 10-K is now well over 100 pages long and full of confusing footnotes; it is no surprise managers are continuing to find other ways to increase the bottom line.

The behaviors of managers during economic downturns as well as booms have been studied in relation to earnings manipulation for decades. In general, the findings have been mixed; however what is understood is the underlying motivations of managers. Managers face pressures from external sources (analysts’ forecasts, contractual obligations, stock market perceptions, etc.), from company culture attributes (stockholders, management compensation, company goals, etc.), and also from other miscellaneous sources (personal bonuses, political reasons, etc.). Recent studies show that managers do not all act similarly during economic downturns. Tilden and Janes (2012) find increased levels of manipulation during recessionary times since 1950; while Strobl (2008), find that the most severe earnings manipulation occurred during times of economic prosperity. Strobl suggests that during economic downturns, investors expect some degree of accounting manipulation and therefore put less emphasis on released reports, which makes incentives low for managers deciding to engage in earnings manipulation. Strobl also suggests that stricter disclosure regulations lead to more manipulation. On the other hand, Lin & Shih (1994), find strong evidence of

---

manipulation during the 1990-1991 US recession. They also suggest that there may be a threshold that managers hit during economic downturns that ultimately determines the degree of manipulation; if managers have no chance of receiving bonuses and feel as though the company is unable to be saved, they will defer income for the purpose of manipulating earnings in a future period, but if they are on the threshold they may work to manage earnings to get out of the hole. Alarmingly, some of the most advanced accounting manipulations via pro forma earnings have a long run outlook. Earnings reserves are kept in arbitrary accounts to be strategically released in the future, for the purpose of long-run maximization.

4. Data

This study explores whether pro forma earnings reporting behavior changes over the time period of 2007-2011. The primary interest is identifying trends in firms’ pro forma reporting behavior. I use data on firms that make up the S&P 500 for years 2007-2011.

Pro forma figures are typically found within quarterly press releases. Data is obtained from Wharton Research Data Services (WRDS). For the purpose of this study, I/B/E/S actual quarterly earnings are used to proxy for the non-GAAP earnings figure disclosed by managers in the press releases. It should be noted that, I/B/E/S actual earnings serves as only a proxy. Prior research has shown that analysts tend to exclude the more transitory items from earnings, and that the nonrecurring items they include in
actual earnings are more persistent and have higher valuation multiples than the expenses they exclude from actual earnings (Gu and Chen, 2004).

All remaining variables, including quarterly GAAP Earnings per share and control variables, are from Compustat data. The data covers the 20 fiscal quarters beginning with Q1 2007 and ending with Q4 2011. Constituents of the S & P 500 change year to year, therefore only companies that are members of the S & P 500 from Q1 2007-Q4 2011 are observed. While this limits my data and may cause some survivorship bias, this time period allows for ample time before and after the S&P 500 index hit rock bottom on March 6, 2009. Given some quarters did not have data for a firm, the sample includes 442 firms and 8,840 quarter observations.

The dependent variable is defined as the difference between I/B/E/S actual earnings and GAAP (DIFF). I argue that this dependent variable is best suited for examining trends in pro forma reporting because it is the most easily quantifiable metric for understanding discrepancies in pro forma and GAAP earnings numbers.

Assuming trends of pro forma reporters have, for the most part, not changed since the early 2000s, important variables to control for are: firm size, intangibles (as percentage of total assets), debt levels, profitability, quarter in which reporting, and amount of special items reported. These serve as the independent variables that are used in hypothesis 3.

Table 1 presents descriptive statistics for the average difference between pro forma and GAAP per year (2007-2011) and for the independent variables. Over the five years, on average, the difference for constituents of the S&P 500 is about $0.11. As predicted, the peak of this difference is in 2008, the lead up year to rock bottom of the financial
crisis, $0.23. Panel B, graphically depicts this trend over the 20 observed quarters. During the 4th quarter of 2008, the biggest difference in these two values is $0.56. This same quarter is the only time in which the average GAAP EPS is negative ($0.27). The S&P 500 consists of 500 companies that are leading companies in market capitalization on the U.S. stock market, thus unsurprisingly Table 1 reveals that the firms included in this analysis are generally very large firms, with mean total assets of just over $50 Billion, the largest being Bank of America during the third quarter of 2010 ($2.36T), and the smallest being First Solar Inc during the first quarter of 2007 ($618 Million). Of these firms, the average percentage of intangibles as a part of total assets is around 20 percent and average leverage is 1.61 percent. Of the 8,840 firm quarter observations over five years, just under 11 percent, or around 840 firm quarter observations displayed GAAP losses.

5. Methodological Approach and Results

5.1 Hypothesis 1: Proportion of Disclosers

When disclosing financial results, a firm must consider whether to report a pro forma figure, and if so how to calculate the pro forma figure. As mentioned, the central issue in this paper is how these disclosure decisions have been affected by the presence of a major economic recession. Prior studies have documented an association between earnings management and declining firm performance. I have also discussed earlier the multitude of pressures that fall on management during tougher economic times, such as analysts’ forecasts, contractual obligations, and stock market perceptions. Earnings
management has been uncovered for years; however, what may be alarming to investors is the fact that, presumably, some earnings management goes undetected. After regulation in 2002, of which the purpose was not to eliminate pro forma reporting, but simply to call for a clear reconciliation of how the firm arrived at a figure, we saw a decrease in the proportion of firms reporting any non-GAAP figure.\textsuperscript{20} It would appear as though regulation discouraged managers using pro forma figures opportunistically otherwise no decline should have been observed. Unfortunately, since the modest decline in frequency in the immediate years after Regulation G, pro forma reporting has been on the rise again; a steady rise has been seen in the percentage of firms reporting pro forma figures since 2003.\textsuperscript{21} Because managers have the right to report pro forma figures when they deem necessary this may not necessarily signify earnings management is on the rise. As Gu and Chen (2004) find in their sample of 28,542 quarterly footnote entries, the most common non-recurring items included in pro forma reconciliations are: restructuring charges (22\%), other (15\%), acquisition expenses (14\%), and asset sale gain (11\%). Restructuring charges are typically incurred when a company is not doing well and must close down plants, lay off workers, etc. To that end, an economic recession therefore could very well see an increase in pro forma reporting due to a slew of restructuring charges within struggling companies. With that said, however; prior research has shown the sophistication of managers who use large “restructuring charges” or similar accounts tend

\textsuperscript{20} Heflin, F., Hsu, C., 2005. The impact of the SEC’s regulation of non-GAAP disclosures. Working paper, Florida State University and Purdue University.

\textsuperscript{21} Doyle, J., Soliman, M., 2011. Do managers define “Street” earnings to meet or beat analyst forecasts? Working paper, University of Utah and Stanford University.
to overestimate the write down initially, only to reverse them in the future.\textsuperscript{22} When these
charges are overestimated early, they can provide a cushion for the future when earnings
fall just short; investors rarely look at the history of these charges.\textsuperscript{23} I expect the
proportion of firms to continue to rise through the recession because of the presence of an
economic downturn, as well as, possible earnings management. When thinking about the
proportion of firms reporting non-GAAP figures and the behavior of management, this
leads to the first hypothesis.

\textbf{H1:} The percentage of firms disclosing pro forma earnings should increase from Q1 2007
to Q1 2009.

Whether or not firms are employing earnings management, the presence of an
economic recession should induce an increase in firms disclosing pro forma earnings. To
the extent an increase is attributed to economic conditions or earnings management is a
question analyzed in detail in the results below.

This study also pays close attention to the behavior of pro forma reporting after
Q1 2009. If the first hypothesis holds true, and then pro forma reporting decreases, then
only to rise again in a bimodal fashion, one may assume some previous large exclusions
are being slowly reversed in the future.

I test H1— In the appendix, in Panel A, you see the graphical depiction and table
of the results. Since, I am interested in seeing the effect of income increasing exclusions,

\textsuperscript{22} Leder, Michelle. \textit{Financial Fine Print: Uncovering a Company’s True Value}. Hoboken, NJ: Wiley &
\textsuperscript{23} Leder, Michelle. \textit{Financial Fine Print: Uncovering a Company’s True Value}. Hoboken, NJ: Wiley &
I only count the firm as a pro forma reporter if the pro forma number exceeded the GAAP EPS. In very few cases, GAAP actually exceeds pro forma; these were left out of the analysis because they represent the minority of differences and are not consistent with the goal of this paper. Heflin and Hsu (2008) found that the average percentage of firms that disclose income increasing exclusions since regulation (2002-2007) is around 45%. Therefore, 45% serves as the population proportion. I then use hypothesis testing for a population proportion on each quarter; $H_0$: $p = 45\%$, and $H_1$: $p > 45\%$. Looking at the table, quarterly observations in bold represent observations that were significant at the 5% level.

By looking at the graph and table in Panel A, it is easy to see that since 2007, the percentage of pro forma reporters clearly increased. What is interesting, and a trend that I will dive into more discussion about later, is the rise seen in 2011, after a decline in 2010. The increased number of disclosers leading up to the rock bottom (Q1 2009) is much less intriguing, than the increased number of disclosers since Q4 2010.

Of the 20 quarters observed, more than half (11) had a significant increase in disclosers from the baseline of 45% observed from years 2002-2007. Of the five fourth quarter observations, four of them had a significant increase in disclosers. Q4 2008 was the quarter right before the S & P 500 hit rock bottom, and also the quarter that had the highest number of income increasing disclosures, 55%. H1 was a good launching point to observe that indeed the pro forma environment was being affected by the recession; H2 and H3 provide further descriptive evidence of this trend.
5.2 Hypothesis 2: Magnitudes of Disclosers

Similar to the above hypothesis, the interest is in the sheer difference between GAAP and non-GAAP earnings. When firms decide whether to disclose pro forma earnings, managers must also decide what GAAP income components to exclude. If pro forma reporting is used more frequently during the Great Recession, casual empiricism suggests that the average difference between GAAP and non-GAAP figures should increase along with the percentage of firms disclosing. Recent evidence shows that since regulation firms have become more creative in where they hide transitory items. This practice would enable pro forma reporters to add more exclusions to income increasing adjustments. The pressures put upon management would give firms incentives to be sure to maximize their exclusions when disclosing pro forma figures. I believe that not only will the percentage of disclosers increase, but the magnitudes of difference will increase as well because of the presence of earnings management. Therefore, to observe trends in pro forma reporting, magnitudes of exclusions must be taken into account, and this leads to hypothesis two:

\[ H2: \text{The magnitude of the difference between GAAP and pro forma earnings should increase from Q1 2007 to Q1 2009.} \]

\[ ^{24}\text{McVay, S., 2006. Earnings management using classification shifting: An examination of core earnings and special items. The Accounting Review, 81, 501–531.} \]
Similar to $H1$, special attention is paid to whether there are continuing trends after Q1 2009. If magnitudes increase, there could be signs of the sophisticated strategies employed by managers as mentioned earlier.

I test H2— in the appendix; Panel B and accompanying tables show the results to H2. H1 shows that there were now more pro forma reporters, but that did not necessarily mean higher magnitudes of exclusions. Prior research showed that magnitudes decreased after the introduction of Regulation G, but what effect would a recession have? The graph in Panel B tells the story. The levels seen before the recession and after the introduction of Regulation G, namely years 2002-2007, were magnitudes between $0.02$-$0.06. The graph shows that the turbulent trend of exclusion magnitudes, reaching at times $0.56$ (2008 Q4), have not since returned to pre-recessionary levels as of the end of 2011.

In terms of my hypothesis, I find an increase in exclusion magnitudes from Q1 2007 to Q1 2009; however, what is interesting is the most significant differences from the baseline quarter of Q1 2007, are not in the year 2009\textsuperscript{25} (besides the quarter of interest Q1 2009), but instead in years 2008 and 2011; please refer to the tables within Panel B. In terms of the most significant exclusion magnitude differences compared to Q1 2007, I observe a significant difference in Q3 2008, Q4 2008, Q1 2009, and Q4 2011. And in terms of the most significant exclusion magnitude differences compared to the year 2007, I see a significant difference in 2008, 2009, and 2011.

These observations lent me to sift through prior literature that might help tell the story behind these trends. One would wonder why, during 2010, well within the range of

\textsuperscript{25} March 9, 2009 was when the S & P 500 index hit rock bottom at 676.53
the financial crises, there were mild differences in exclusion magnitudes between GAAP and pro forma. And why did 2011 see such an increase in difference magnitudes?

In the favor of appropriate manager exclusion decisions, the significant increase in the latter half of 2008 and the first quarter of 2009 makes sense. As pointed out in the literature review section, Gu and Chen (2004), found that the most common non-recurring items included in pro forma reconciliations are restructuring charges. Restructuring charges are most closely related to poor performance; when companies are closing down plants, laying off workers, etc. With that said, a significant amount of legitimate restructuring charges could have been excluded in arriving at pro forma figures; therefore, increasing the magnitudes during this time period.

However, the restructuring charge reconciliation does not do well in explaining the difference in magnitudes seen in 2011. Proving any kind of earnings management during the years of 2008 and 2009 would be challenging, seeing as, legitimate one-time expenses could have prevailed, considering the economic environment. But how then, during 2011, a time of recovery, are “non-recurring” expenses once again on the rise? Well, as mentioned earlier, this evidence alludes to possible earnings management, very sophisticated earnings management. Without claiming earnings management, it is important to note a discovery prior literature has found in the use of “long-term” planning in pro forma reporting. Just after Regulation G, Arthur Levitt, former SEC chairman warned that the SEC had noticed a pattern of companies taking large restructuring charges, only to reverse some of those expenses later on in the future. The early overstatement of restructuring charges, allow companies to create a type of reserve,
hidden deep in the financials that can be called upon on a later date to boost earnings. Although regulation G doesn’t allow companies to take the same “one-time” charge in consecutive years, companies are simply changing the names of the write-offs to get around this rule. And as explained earlier, restructuring charges were the most common write-off. At any rate, it appears that financial statement users need to view large “special” charges with a great deal of skepticism, because there could be a manager with a long term plan to make the company look better.

This story could be useful in understanding why there was a major difference in magnitudes seen during the beginning of the recession, a relatively mild period, and then once again a major difference in magnitudes during the recovery phase. It could be the possibility that managers were reversing these writes downs, in hopes of speeding up recovery. This of course is only speculation.

### 5.3 Hypothesis 3: The Drivers Behind Magnitudes

Evidence shows that not only are pro forma disclosures used to opportunistically manage earnings, but the typical abusers have similar characteristics. Bhattacharya et. al. (2004) find from a sample size of 1,149 hand collected pro forma press announcements that pro forma reporters are typically in service industries (specifically

---

high tech), relatively young firms, large market cap firms, firms with relatively higher debt levels, less profitable, and firms with relatively high PE ratios. This sort of evidence helps establish the third hypothesis, and controls that should accompany the multivariate test.

In practice, there are typically three major targets that tend to exist: (1) reporting a profit, (2) meeting or beating analyst’s expectations, and (3) avoiding an earnings decrease. In my preliminary observations, of the 442 companies over 20 different quarters, on average 89% post a profit in terms of GAAP (11% report a loss); and on average 93% post a profit in terms of pro forma (7% report a loss). This 4% difference suggests, of the 11% that report a loss on GAAP (49 companies), nearly 4% (18 companies) manage to report a profit when it comes to pro forma. This shows a heavy importance of companies finding ways to report a positive earnings number. Please refer to Panel C in the appendix to see the graphical display. This sort of preliminary information led me to H3; negative earnings would be a major catalyst in determining the difference in magnitudes between GAAP and pro forma.

**H3:** The largest driver in the differences in magnitude between GAAP-non-GAAP reporting should be whether a firm reported a loss for that quarterly observation

To test the third hypothesis, I use cross sectional panel data and a random effects linear model. A random effects model allows me to most appropriately take into account that observations are taken over time on the same firms using the same units. Prior research has suggested the inclusion of other independent variables. Lougee and
Marquardt (2004) suggests that larger firms are more likely to disclose pro forma results different from GAAP, therefore, firm size is included as the natural log of total assets (LNASSET). Lougee and Marquardt also suggest that firms with higher leverage are more likely to disclose pro forma earnings, therefore, debt to equity ratios for each company are used (LEV). Following Heflin and Hsu (2008), intangible assets (INTANG) is included as the amount of intangible assets on the balance sheet for a firm as a percentage of total assets. Because exclusions arise from intangible assets in some cases, one expects firms with a high percentage of intangibles on the balance sheet to have, on average, a higher magnitude of difference.

Two additional controls which are consistent with managers’ motivations and pressures faced in regards to firm performance, LOSS and Q4, respectively, are included in the analysis. These are both included as binary variables. LOSS equals 1 during any quarter observation in which GAAP earnings are negative and 0 otherwise. One expects that firms with GAAP losses should be more likely to increase the difference between their GAAP and pro forma number. Q4 equals 1 during any quarter observation that is during the fourth quarter of a fiscal year and 0 otherwise. Mendenhall and Nichols (1988) suggest managers face increased pressures during the fourth quarter.

Finally, prior research suggests firms with special items and restructuring costs use these categories to increase pro forma figures (Bradshaw and Sloan, 2002). SPEC, monetary amount of special items listed on the balance sheet, as well as, RESTRUCT, amount of restructuring costs for quarter, are used as two additional controls. The lag variable, denoted δ is the DIFF of the previous quarter regressed on the current quarter DIFF in order to see if there is a consistency among firms, possibly alluding to intent to
manage earnings; this will show the level of consistency in reporting pro forma figures; consistency in pro forma would be frowned upon, because pro forma earnings are described as “non-recurring”, so any level of consistency would suggest earnings management. More specifically, I estimate a model of the following form:

\[ DIFF_{it} = \alpha_0 + \beta Year_{it} + \gamma FC_{it} + \delta DIFF_{i,t-1} + \epsilon_{it} \text{ (RE)} \]

Where DIFF is the difference between I/B/E/S actual earnings and GAAP and individual firms are denoted by i and t denotes time. Year is a vector of year indicator variables (2007-2011, the left out category is 2007). FC is a vector of financial characteristics (i.e., LNASSETS, SPEC, INTANG, LOSS, LEV, RESTRUCT, q4). DIFF_{t-1} represents the lag variable for t-1 firm specific quarterly observations, and \( \epsilon \) represents the usual residual, mean=0, uncorrelated with itself. The strength of a random effects model is the flexibility to give correct estimates in the presence of correlated errors that arise from a data hierarchy.

The regression results can be seen in the Table 2 of the Appendix. Overall, the regression is a respectable predictor of the difference (DIFF) between pro forma and GAAP EPS, with 20% of the variation in differences being explained by the model.

H2 is further strengthened by the regression results. As mentioned above, significant differences in magnitudes were seen during years 2008 and 2011, in relation to baseline year 2007. The regression results show the same. Years 2008 and 2009 are both significant at the 1% level. Compared to 2007, the difference (DIFF) between pro forma and GAAP increases on average by $0.14 (2008) and $0.11 (2011) for a firms’ quarterly EPS earnings announcement.
The coefficients on the variables are as I would expect and significant variables in determining the DIFF are some of the variables I would expect. Specifically, LOSS, which was my variable of interest in H3, is significant at the 1% level. My results indicate that, when firms report an operating GAAP loss, the difference (DIFF) between GAAP and pro forma will be, on average, $0.76. This magnitude of difference is quite alarming. This goes back to my theory that managers will do everything in their power to get out of the red, even if that means an EPS of zero.

Prior to the results, a firm’s percentage of intangibles as a part of total assets was thought to have a positive effect on DIFF; that is, the more intangible heavy a firm is, the more likely they are to report a larger magnitude of difference in pro forma. As the results show, within the sample of S & P 500 firms, for every increase of one percent of intangibles, on average, the DIFF rises by $0.19. This lends support to prior literature that suggests that high tech firms, are in many cases the worst abusers of pro forma reconciliations.29

Another set of significant independent variables were SPEC (special items) and RESTRUCT (restructuring costs). These were both significant at the 1% level; however, have coefficients that are so small that they do not affect DIFF as much as their p-values would suggest. The size of the firm (LNASSETS), amount of leverage in capital structure (LEV), and which quarter an observation came from (Q4), appears to have little effect on the difference in magnitudes reported.

Although I set out to explore the impact that LOSS had on DIFF, the most interesting variable and coefficient may be the DIFF L1—The lag variable. This was

included to gain a sense of what level of consistency did the same firm report pro forma figures different from GAAP figures. Considering that pro forma practice was meant to be a way for firms to limit their exposure to non-recurring items, it would suggest that no level of consistency should be apparent—the results suggest otherwise. Although I would expect some level of correlation between t and t-1, significance at the 1% level, and a coefficient of nearly $0.10 suggests there is a level of consistency of firms to report pro forma figures different from GAAP quarter over quarter.

One story behind this interesting result could be managers’ confidence that they could slide more past investors during a recessionary time. Until the Enron collapse, many had challenged, “What’s the big deal? Aren’t there always accounting related surprises in a recessionary economy?30” This sort of attitude could lead managers to believe that they could consistently find expenses to exclude during this time because investors would simply understand that ‘everyone’ was doing poorly. Once again the long run strategies mentioned earlier would come into play. By taking consistent write downs and restructuring charges during times of little observance, reversals could be used in future periods in a slow drawn out way to attract less attention. This of course is only an idea and may not be the true nature of what was going on; however, future research could explore this idea further. Did managers use long term strategies during the Great Recession in terms of pro forma reporting to create reserves to draw upon in future time periods?

6. Conclusion

Investors should think twice before accepting a pro forma earnings figure as truth before looking a little closer into the reconciliation of that figure. Prior studies, my study, and presumably future studies will continue to find some peculiar patterns in financial statements. It is up to the user to be aware of when there is possibility for deception, and up to others to help curb the deception on the part of managers. There is a lot that goes into accounting for a company, and the pressures of today’s financial environment can lead managers to do things they would not otherwise do.

This study was not intended to make any bold conclusions as to whether earnings management was apparent during the Great Recession, nor to support or criticize the use of pro forma EPS; it was simply to shed light on trends in pro forma reporting seen during the financial crisis, and to speculate what may explain the trends seen in the results. The results have shown that there was indeed a significant increase in the proportion of pro forma disclosers and the magnitudes of those disclosers. Results from the regression have concluded that the presence of negative earnings and intangibles have a significant effect on the magnitude of difference between pro forma and GAAP. Results have also shown significant increases in magnitudes during years 2008 and 2011, as well as, a level of consistency in the lag variable. These results allude to a possible strategy of long-term earnings management, but more in depth research would be needed to make this conclusion.

The biggest limitation of this study is that I/B/E/S analyst estimates were used as a proxy for pro forma numbers. A hand-collected sample of press releases, as well as a
more diverse sample of firms would possibly solidify results. Future research in this topic could look to dive deeper to what exclusions were made during 2008, and if reversals of those exclusions were partly due to the apparent increase during 2011.

The pro forma debate will continue to rage on, as to whether it serves an important platform for companies to portray to investors a reported measure that more closely identifies “core” earnings; until then, more research will continue to look into not only the usefulness of pro forma reporting but also the integrity that lies behind it.
Appendix

Panel A: Percentage of Pro Forma Disclosers

\[
Z = \frac{\hat{p} - p}{\sqrt{\frac{pq}{n}}}
\]

<table>
<thead>
<tr>
<th>Year</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Yr. Avg</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>44%</td>
<td>40%</td>
<td>48%</td>
<td>48%</td>
<td>45%</td>
</tr>
<tr>
<td>2008</td>
<td>48%</td>
<td>48%</td>
<td>51%</td>
<td>55%</td>
<td>51%</td>
</tr>
<tr>
<td>2009</td>
<td>51%</td>
<td>49%</td>
<td>47%</td>
<td>50%</td>
<td>49%</td>
</tr>
<tr>
<td>2010</td>
<td>51%</td>
<td>47%</td>
<td>47%</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>2011</td>
<td>51%</td>
<td>52%</td>
<td>49%</td>
<td>53%</td>
<td>51%</td>
</tr>
</tbody>
</table>
Panel B: Magnitude Trends

<table>
<thead>
<tr>
<th>Year</th>
<th>DIFF</th>
<th>Z stat</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007 Q1</td>
<td>$0.06</td>
<td>Base</td>
<td></td>
</tr>
<tr>
<td>2007 Q2</td>
<td>$0.02</td>
<td>1.052</td>
<td>0.146</td>
</tr>
<tr>
<td>2007 Q3</td>
<td>$0.01</td>
<td>1.137</td>
<td>0.128</td>
</tr>
<tr>
<td>2007 Q4</td>
<td>$0.01</td>
<td>0.656</td>
<td>0.256</td>
</tr>
<tr>
<td>2008 Q1</td>
<td>$0.04</td>
<td>0.514</td>
<td>0.304</td>
</tr>
<tr>
<td>2008 Q2</td>
<td>$0.12</td>
<td>-1.124</td>
<td>0.130</td>
</tr>
<tr>
<td>2008 Q3</td>
<td>$0.22</td>
<td>-1.962</td>
<td>0.025 **</td>
</tr>
<tr>
<td>2008 Q4</td>
<td>$0.56</td>
<td>-3.714</td>
<td>0.000 ***</td>
</tr>
<tr>
<td>2009 Q1</td>
<td>$0.15</td>
<td>-1.750</td>
<td>0.040 **</td>
</tr>
<tr>
<td>2009 Q2</td>
<td>$0.10</td>
<td>-0.923</td>
<td>0.178</td>
</tr>
<tr>
<td>2009 Q3</td>
<td>$0.04</td>
<td>0.705</td>
<td>0.240</td>
</tr>
<tr>
<td>2009 Q4</td>
<td>$0.05</td>
<td>0.512</td>
<td>0.304</td>
</tr>
<tr>
<td>2010 Q1</td>
<td>$0.07</td>
<td>-0.144</td>
<td>0.443</td>
</tr>
<tr>
<td>2010 Q2</td>
<td>$0.06</td>
<td>0.135</td>
<td>0.446</td>
</tr>
<tr>
<td>2010 Q3</td>
<td>$0.06</td>
<td>0.191</td>
<td>0.424</td>
</tr>
<tr>
<td>2010 Q4</td>
<td>$0.04</td>
<td>0.695</td>
<td>0.243</td>
</tr>
<tr>
<td>2011 Q1</td>
<td>$0.08</td>
<td>-0.379</td>
<td>0.352</td>
</tr>
<tr>
<td>2011 Q2</td>
<td>$0.11</td>
<td>-0.751</td>
<td>0.226</td>
</tr>
<tr>
<td>2011 Q3</td>
<td>$0.12</td>
<td>-1.040</td>
<td>0.149</td>
</tr>
<tr>
<td>2011 Q4</td>
<td>$0.21</td>
<td>-2.031</td>
<td>0.021 **</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Year</th>
<th>DIFF</th>
<th>Z stat</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>$0.03</td>
<td>Base</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>$0.23</td>
<td>-4.475</td>
<td>0.000 ***</td>
</tr>
<tr>
<td>2009</td>
<td>$0.08</td>
<td>-1.982</td>
<td>0.024 **</td>
</tr>
<tr>
<td>2010</td>
<td>$0.05</td>
<td>-1.174</td>
<td>0.120</td>
</tr>
<tr>
<td>2011</td>
<td>$0.14</td>
<td>-3.071</td>
<td>0.001 ***</td>
</tr>
</tbody>
</table>

***P<0.01
**P<0.05
TABLE 1
Descriptive Statistics

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Overall Sample</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIFF</td>
<td>0.107</td>
<td>1.110</td>
<td>0.026</td>
<td>1.170</td>
<td>0.233</td>
<td>0.795</td>
</tr>
<tr>
<td>Control Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GAAP</td>
<td>0.588</td>
<td>1.247</td>
<td>0.670</td>
<td>0.897</td>
<td>0.372</td>
<td>1.892</td>
</tr>
<tr>
<td>PRO FORMA</td>
<td>0.695</td>
<td>1.018</td>
<td>0.696</td>
<td>1.228</td>
<td>0.617</td>
<td>1.201</td>
</tr>
<tr>
<td>SPEC</td>
<td>-61.5</td>
<td>700.7</td>
<td>-50.4</td>
<td>744.4</td>
<td>-135</td>
<td>1136</td>
</tr>
<tr>
<td>INTANG</td>
<td>0.201</td>
<td>0.295</td>
<td>0.192</td>
<td>0.200</td>
<td>0.200</td>
<td>0.200</td>
</tr>
<tr>
<td>LOSS</td>
<td>0.096</td>
<td>0.295</td>
<td>0.060</td>
<td>0.237</td>
<td>0.132</td>
<td>0.334</td>
</tr>
<tr>
<td>LEV</td>
<td>1.641</td>
<td>76.30</td>
<td>3.368</td>
<td>19.32</td>
<td>2.931</td>
<td>29.65</td>
</tr>
<tr>
<td>RESTRUCT</td>
<td>-9.47</td>
<td>49.14</td>
<td>-8.63</td>
<td>50.43</td>
<td>-12.9</td>
<td>67.11</td>
</tr>
<tr>
<td>Q4</td>
<td>0.250</td>
<td>0.433</td>
<td>0.250</td>
<td>0.433</td>
<td>0.249</td>
<td>0.433</td>
</tr>
</tbody>
</table>

Time Series Var

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2007-2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Id_var</td>
<td>X</td>
</tr>
</tbody>
</table>

This sample covers the first quarter of 2007 through the fourth quarter of 2011

Variable Definitions:
- DIFF = Monetary difference between Pro Forma and GAAP as reported by Constituent
- GAAP = (basic) earnings per share before extraordinary items and discontinued operations
- PRO FORMA = I/B/E/S reported actual (basic) earnings per share
- LN ASSET = To control for firm size, natural log of total assets
- SPEC = Amount of special items reported in given quarter
- INTANG = Total intangibles as a percentage of total assets on the balance sheet
- LOSS = Binary variable, 1 if GAAP reported loss, 0 otherwise
- LEV = Leverage, debt to equity ratio for constituent
- RESTRUCT = Amount of restructuring charges reported in given quarter
- Q4 = Binary variable, 1 if observation is from 4th quarter
- YEAR TRENDS = Fixed effect independent variable
- Id_var = lag variable, DIFF_{t-1}
### TABLE 2

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>DIFF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year08</td>
<td>0.137***</td>
</tr>
<tr>
<td></td>
<td>(0.0373)</td>
</tr>
<tr>
<td>Year09</td>
<td>0.0113</td>
</tr>
<tr>
<td></td>
<td>(0.0374)</td>
</tr>
<tr>
<td>Year10</td>
<td>0.0406</td>
</tr>
<tr>
<td></td>
<td>(0.0372)</td>
</tr>
<tr>
<td>Year11</td>
<td>0.111***</td>
</tr>
<tr>
<td></td>
<td>(0.0372)</td>
</tr>
<tr>
<td>LNASSETS</td>
<td>-0.00420</td>
</tr>
<tr>
<td></td>
<td>(0.00862)</td>
</tr>
<tr>
<td>SPEC</td>
<td>-0.000547***</td>
</tr>
<tr>
<td></td>
<td>(1.61e-05)</td>
</tr>
<tr>
<td>INTANG</td>
<td>0.187***</td>
</tr>
<tr>
<td></td>
<td>(0.0563)</td>
</tr>
<tr>
<td>LOSS</td>
<td>0.760***</td>
</tr>
<tr>
<td></td>
<td>(0.0389)</td>
</tr>
<tr>
<td>LEV</td>
<td>-3.15e-05</td>
</tr>
<tr>
<td></td>
<td>(0.000136)</td>
</tr>
<tr>
<td>RESTRUCT</td>
<td>0.00239***</td>
</tr>
<tr>
<td></td>
<td>(0.000226)</td>
</tr>
<tr>
<td>Q4</td>
<td>0.0313</td>
</tr>
<tr>
<td></td>
<td>(0.0255)</td>
</tr>
<tr>
<td>L.DIFF</td>
<td>0.0991***</td>
</tr>
<tr>
<td></td>
<td>(0.0100)</td>
</tr>
<tr>
<td>Constant</td>
<td>-0.0543</td>
</tr>
<tr>
<td></td>
<td>(0.0890)</td>
</tr>
</tbody>
</table>

Observations 8,398  
Number of id_var 442

Standard errors in parentheses  
*** p<0.01, ** p<0.05, * p<0.1
References


Doyle, J., Soliman, M., 2011. Do managers define “Street” earnings to meet or beat analyst forecasts? Forthcoming. JAE.


