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The Predictive Value of Expenses Excluded from Pro Forma Earnings

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Abstract. We investigate the informational properties of pro forma earnings. This increasingly popular measure of earnings excludes certain expenses that the company deems non-recurring, non-cash, or otherwise unimportant for understanding the future value of the firm. We find, however, that these expenses are far from unimportant. Higher levels of exclusions lead to predictably lower future cash flows. We also find that investors do not fully appreciate the lower cash flow implications at the time of the earnings announcement. A trading strategy based on the excluded expenses yields a large positive abnormal return in the years following the announcement, and persists after controlling for various risk factors and other anomalies.

Keywords: pro forma earnings, capital markets, market efficiency, mispricing

JEL Classification: M4

It has become commonplace for public companies to develop and report their own measures of periodic financial performance in press releases. Labeled as pro forma, ''street'' or ''operating'' earnings, these measures frequently omit non-recurring expenses, non-cash expenses, and a variety of other miscellaneous charges. As an example, in the fourth quarter of 2001 AT&T excluded from its definition of pro forma earnings restructuring charges, asset impairment charges, losses on the sale of businesses and assets, goodwill amortization, and losses on equity method investments, boosting income from −39 cents per share on a GAAP basis to 5 cents per share on a pro forma basis. The headline of the press release was ''Fourth Quarter Earnings from Continuing Operations Were $0.05 Per Diluted Share.'' A brief description of the excluded expenses appeared on the fifth page of the press release. A GAAP income statement did not appear until page 17. On the Yahoo!Finance website, 5 cents per share is the only result compared to the First Call earnings estimate of 4 cents per share (AT&T beat the consensus estimate by a penny).

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Bradshaw and Sloan (2002) document a steady increase in the difference between pro forma earnings and GAAP earnings since 1985. They estimate that in the fourth quarter of 1997 pro forma earnings exceeded bottom-line GAAP earnings by 17–21%. Even more striking is the *Wall Street Journal*'s observation that in the second quarter of 2001, 300 of the S&P 500 companies reported pro forma earnings that excluded some expenses from their GAAP earnings, with the result that 60 cents of every dollar of pro forma earnings was due to the exclusion of expenses recorded under GAAP accounting (August 21, 2001, p. 1). While companies generally defend their definitions of pro forma earnings as providing better measures of their future prospects, the financial press and accounting regulators have been more skeptical, claiming that these new measures are being used to manipulate investors' perceptions of the firm. The purpose of this study is to investigate (1) whether the expenses excluded from pro forma earnings provide incremental information about a firm's future cash flows beyond the pro forma earnings number itself, and (2) whether the stock market appropriately prices the predictable association between the excluded expenses in pro forma earnings and future cash flows.

The financial press has raised a number of red flags regarding the use of pro forma earnings definitions, as illustrated by *Wall Street Journal* articles titled "Companies Pollute Earnings Reports," (August 21, 2001) and "'Pro Forma' Profits Don't Impress Pros," (November 25, 2001). In an effort to slow the proliferation of new definitions of pro forma earnings, Standard & Poor's sent a letter to Wall Street executives warning of the abuses of pro forma earnings definitions and suggesting its own standard for "operating earnings" (*Wall Street Journal*, November 7, 2001). Similarly, the Financial Executives International industry group and the National Investor Relations Institute have each warned their members about the use of pro forma earnings and published guidelines for best practice.

The increased emphasis on company-defined earnings has also raised regulatory concerns. In public remarks, the chief accountant for the SEC coined the nickname "earnings before the bad stuff" for pro forma earnings (Turner, 2000). And in a recent release the SEC stated, "We wish to caution public companies on their use of this 'pro forma' financial information and to alert investors to the potential dangers of such information" (SEC, 2001). The release goes on to warn companies about the importance of clearly describing the basis of the pro forma calculation and applying it uniformly across comparable periods. It also suggests that the omitted expenses may constitute a "material omission" if, by their omission, a GAAP loss is recast as a pro forma profit.

Although the use of pro forma earnings generally downplays certain expenses and may increase the perceived value of the firm's ongoing earnings potential, it is not clear that this is a detriment to the information environment. In support of their creation of a pro forma earnings number, companies frequently claim that it is a superior measure of the firm's true performance. For instance, a spokesperson for Amazon stated that the company believes that pro forma results "give better insight into the fundamental operations of our business than does the bottom line" (Weil, 2001). And, in its release, the SEC concedes that such information can serve useful

purposes, and that "companies may quite appropriately wish to focus investors' attention on critical issues..." (SEC, 2001).

Other studies have investigated the quality of pro forma earnings by examining how the stock market responds to different definitions of earnings. Bradshaw and Sloan (2002) and Brown and Sivakumar (2001) find that the market response is more closely associated with the pro forma definition of earnings than the GAAP definition, where pro forma earnings is defined as the actual EPS reported by IBES. This result is also confirmed by Bhattacharya et al. (2002) who collect pro forma earnings from a sample of press releases. In contrast, Johnson and Schwartz (2001) and Lougee and Marquardt (2002) hand-collect press release data and generally find no difference in the market's reaction to GAAP earnings or pro forma earnings.[1] While the contemporaneous stock market response to an earnings announcement is a valid way to investigate what information the market is using, it ignores the possibility that the market may be misled by the use of pro forma earnings, which is the very concern that regulators and the financial press have expressed. In contrast, we examine the stock return for up to three years after the earnings announcement and document a significant difference between firms with high and low amounts of excluded expenses in their definition of pro forma earnings.

As in our study, Brown and Sivakumar (2001) and Lougee and Marquardt (2002) examine the predictive ability of pro forma earnings for future performance, but the benchmark is very different. Brown and Sivakumar (2001) find that pro forma earnings predicts itself better in the future than GAAP earnings does. But it is unclear why the ability to predict itself is a desirable attribute of a performance measure; always reporting that earnings equal six dollars would result in perfect predictive ability. Lougee and Marquardt (2002) do a limited analysis of the ability to predict future cash from operations, but they only examine one quarter in the future and find no significant difference in the predictive ability of GAAP and pro forma earnings for their full sample. In contrast, we examine cash flows up to three years in the future and find statistically and economically significant relations between future cash flows and the expenses excluded in a company's definition of pro forma earnings.

We decompose the difference between GAAP earnings and pro forma earnings (i.e., the exclusions) into two parts: special items and other exclusions. Special item exclusions are relatively easy to identify, with the most common example being a restructuring charge. The remaining difference between GAAP earnings and pro forma earnings is decidedly more vague. The most easily recognizable "other exclusion" is the amortization of goodwill, but there are many others that are more difficult to identify. Some examples are the exclusion of operating losses from stores scheduled to be closed in the future (The Great Atlantic and Pacific Company, fourth quarter of 1998), the exclusion of stock compensation expense (Amazon, fourth quarter of 2001), the exclusion of in-process R&D charges (AT&T, third quarter of 1999), and the exclusion of legal settlement costs (General Motors, third quarter of 2001).[2]

What gets excluded in a particular firm's definition of pro forma earnings varies greatly across companies, and the variation cuts across line items on the income

statement and categories of accruals. Consequently, a study of the predictive ability of pro forma earnings and its capital market consequences cuts across a number of existing areas in the accounting literature as well. A large literature documents the relative persistence of different line items on the income statement, with particular emphasis on special items, and studies how the varying levels of persistence affects the capital market reaction to the earnings news.[3] Another large literature studies the relative predictive value of accruals and cash flows for future cash flows, and examines the capital market pricing of these two components of earnings.[4] Our findings are related to each of these literatures, but we stress that the expenses excluded from pro forma earnings do not sort neatly into particular line item categories or accrual categories. Some exclusions occur at the level of gross profit (e.g., the operating performance of certain stores) while others occur further down the income statement (e.g., equity method losses). Some exclusions are accruals that represent future cash expenditures (e.g., estimated severance costs in a restructuring) while others are accruals associated with cash flows that have already occurred (e.g., inventory write-downs). Some exclusions are non-discretionary accruals (e.g., goodwill amortization) and others are discretionary accruals (e.g., asset impairment). However, all exclusions have the unique feature that management chose to exclude them in the pro forma definition of earnings. For example, two firms could have identical special items yet one firm could choose to exclude those items in its pro forma earnings while the other firm does not.

We find that the expenses excluded from pro forma earnings are far from unimportant or nonrecurring. As a benchmark, one dollar of pro forma earnings in a quarter predicts 7.895 dollars of future cash from operations over the next three years. If the expenses excluded from this pro forma number are nonrecurring, they should have no predictive value for future cash flows. However, we find that one dollar of excluded expense in a quarter predicts 3.328 fewer dollars of cash flow over the next three years, more than 40% of the predictive value of pro forma earnings. When we distinguish between special items and other exclusions, the results get even more powerful. Special items are generally unrelated to future cash flows, but other exclusions are powerfully predictive of negative future cash flows. A dollar of other exclusions in a quarter predicts 6.422 fewer dollars of future cash from operations over the next three years, almost as predictive as the pro forma earnings number itself. Not only are other excluded expenses recurring, they recur and consume cash just as regularly as the pro forma earnings amount that is typically billed as a better measure of ''core earnings.''

Given that the excluded expenses in the pro forma earnings definition significantly predict future cash flows, it is natural to ask if the stock market fully anticipates this relation when reacting to the firm's earnings announcement. If the stock market reaction to the earnings announcement fully incorporates the information content of a firm's pro forma earnings definition, then perhaps the concern about pro forma reporting is unwarranted. Indeed, we find that the three-day return around the earnings announcement is declining in the amount of exclusions. However, it appears that the adjustment is not nearly large enough. Stock returns for three years after the earnings announcement are significantly decreasing in the amount of exclusions. A

hedge portfolio that takes a long position in the decile of firms with the lowest other exclusions and takes a short position in the decile of firms with the highest other exclusions earns an average of 29.9% over the three years subsequent to the earnings announcement. In addition, the hedge return based on other exclusions is positive in 10 out of 11 years of portfolio formation. These results also hold in a regression that controls for risk, as measured by beta, firm size, and the book-to-market ratio; and they hold after controlling for three other documented anomalies, post-earnings-announcement drift, the accruals effect and price momentum. By using computer-intensive statistical methods in the hedge returns, we show that our return results are not caused by distortions in the return distribution or by the regression model's assumption of linearity.

In sum, we find that firms with relatively large exclusions in their definition of pro forma earnings suffer relatively lower future cash flows and relatively lower stock returns over the next three years, and the market does not fully appreciate the predictive power of the excluded expenses. In the next section we develop our tests, in Section 2 we discuss the results, and we conclude in Section 3.

1. Hypotheses and Tests

Our hypotheses in this study are very simple. The supporters of pro forma earnings claim that the excluded expenses are unimportant for understanding the future performance of the firm, while the detractors claim that relevant expenses are being ignored in order to mislead capital market participants. Given this debate, we simply ask whether or not the exclusions are indeed unimportant, and whether or not the capital market is indeed misled. Casual evidence suggests that firms use exclusions to manage earnings, and Doyle and Soliman (2002) offer statistical evidence consistent with this, but our study does not require this interpretation. Regardless of how or why the exclusions came to be, we examine whether the exclusions have predictive content and whether the market understands their predictive content.

Consistent with Brown and Sivakumar (2001) and Bradshaw and Sloan (2002), we define pro forma earnings as the IBES-reported actual earnings per share. While this variable is of interest in its own right, we believe it is also a good proxy for what the firm reports in its quarterly earnings announcement. First, IBES uses the quarterly press release as its source for the actual earnings per share. Second, given the close relation between management and analysts, it is difficult to believe that the two parties are not focused on the same earnings definition; otherwise, what would it mean to beat analyst forecasts?[5] Recall from the AT&T example that the consensus forecast was four cents per share, the AT&T press release announced the results as five cents per share, so AT&T beat the consensus forecast by a penny, and this was the amount collected and listed as the actual earnings per share by IBES and the other analyst-tracking services. Third, Johnson and Schwartz (2001) identify the earnings per share number that the firm emphasizes

the most in a sample of press releases, and conclude it closely corresponds to the actual earnings per share as reported in Zacks. Similarly, Bhattacharya et al. (2002) find that over 65% of their hand-collected pro forma figures perfectly match the IBES figure. The remaining difference between the median hand-collected pro forma EPS and the median IBES EPS is only one cent in both the Bhattacharya et al. sample and in the Johnson and Schwartz sample, and neither study shows that this difference is statistically significant. Finally, to verify that the IBES number corresponds with the company earnings announcement in our sample, we collected the 1999 fourth quarter earnings announcement press release for 50 randomly chosen firms. In 48 cases the IBES actual earnings per share was prominently featured in the press release. For the remaining two cases, only the GAAP earnings per share was reported, but the exclusions needed to reconcile to the IBES actual earnings per share were shown in the lead paragraph of the press release. Because our research questions do not require the details given in the actual press release, we can greatly expand our sample size by using the IBES figure as our definition of pro forma earnings.

We begin by computing the total exclusions implied by the pro forma earnings number. IBES split-adjusts the earnings per share in its standard historical database. This makes the EPS figure comparable across time, but the split-adjusted EPS is not the actual EPS originally reported and coded in IBES at the time of the press release. Because this could induce a look-ahead bias in our stock return tests, we obtain the unadjusted IBES database. This makes the IBES figures directly comparable to the Compustat figures, which record the historically reported amounts, without having to back out the split adjustment from IBES.[6] IBES flags whether the reported pro forma number is basic or diluted earnings per share. GAAP earnings is defined as earnings per share before extraordinary items and discontinued operations, using either basic (data item #19) or diluted (data item #9), depending on the IBES basic/diluted flag. The difference between pro forma earnings and GAAP earnings is defined as total exclusions: Total Exclusions = Pro Forma Earnings – GAAP Earnings. When pro forma earnings are higher than GAAP earnings, total exclusions are positive. We include AT&T's results from the fourth quarter of 2001 as an illustration.

AT&T 2001 Q4	
Pro Forma Earnings	0.05
Less: GAAP Earnings	(– 0.39)
Total Exclusions	0.44

Next we decompose the total exclusions into special items and other exclusions. Operating income per share is defined in Compustat (data item #177) as GAAP earnings per share given above less special items per share (on an after-tax basis), so we compute special items per share as Special Items = Operating Income – GAAP Earnings, as illustrated using AT&T.[7]

AT&T 2001 Q4	
Operating Income	−0.21
Less: GAAP Earnings	(−0.39)
Special Items	0.18

Compustat defines special items as ''unusual or nonrecurring items presented above taxes'' with the most common examples being restructuring charges, asset write-downs, or losses on the sale of assets. In the AT&T example, the special item was mainly the cost of severance from a restructuring. The remaining portion of total exclusions is labeled as other exclusions: Other Exclusions = Total Exclusions − Special Items, as illustrated by AT&T.

AT&T 2001 Q4	
Total Exclusions	0.44
Less: Special Items	(0.18)
Other Exclusions	0.26

In the AT&T example, the other exclusions were composed of many different items, including losses on equity-method investments, losses on the sale of businesses and asset impairments, and a large component simply described as ''other''. In sum: GAAP Earnings = Pro Forma Earnings − Special Items − Other Exclusions, as illustrated by AT&T.

AT&T 2001 Q4	
Pro Forma Earnings	0.05
Less: Special Items	(0.18)
Less: Other Exclusions	(0.26)
GAAP Earnings	−0.39

We distinguish between special item exclusions and other exclusions in order to study whether the two types of exclusions have different predictive properties. However, while the definition of total exclusions is clear and the amount is typically easy to identify in a quarterly earnings announcement, the distinction between special items and other exclusions is not always obvious and the relative amounts may sometimes be difficult to identify. For this reason, in all of our analysis we first study the implications of total exclusions and then examine the separate effects of special items and other exclusions.

1.1. Future Cash Flow Tests

Our first set of tests examines the relation between future cash flows and the items excluded from the firm's definition of pro forma earnings. If these exclusions are truly non-recurring or otherwise unimportant, as is generally claimed by managers, then they should not be associated with future cash flows. Alternatively, if the exclusions are useful in predicting future cash flows, then focusing on pro forma earnings alone, without also considering GAAP earnings, would ignore useful information. We admit at the outset that an association with future cash flows is not the only relevant benchmark for "useful" information, but we believe this metric has some desirable features. First, it corresponds with the FASB's conceptual framework, where information is considered useful if it aids in predicting the "amounts, timing, and uncertainty" of future cash flows (SFAC No. 1, para. 37). Second, it is uninfluenced by more traditional forms of earnings management where the recognition of income is either accelerated or delayed by the manipulation of accruals. This is important because it is not unreasonable to expect that a firm that uses an aggressive definition of pro forma earnings may also engage in other types of earnings management. Unlike accrual manipulation, however, the items excluded from pro forma earnings never reverse. The only way to identify potentially mislabeled "non-recurring" expenses is to see if they are associated with recurring real cash outlays in the future. Hence, measuring the association between current exclusions and future cash flows seems to be a reasonable test of the assertion that the exclusions are non-recurring, or that they are non-cash and therefore unimportant.

If exclusions do predict future cash flows, it is uncertain when in the future the predictable cash flows will arise. For this reason we sum over three future periods: one, two or three years after the initial quarter in which the pro forma earnings number is announced. We also investigate two different definitions of cash flow: cash flow from operations (data item #108) and free cash flow, defined as cash from operations less capital expenditures (data item #90). The advantage of cash from operations (CFO) is that it is a reported number in the financial statements. The advantage of free cash flow (FCF) is that it is an important input in valuation models and it is insensitive to manipulations that misclassify operating cash flows as investing cash flows (as occurred in the recent WorldCom scandal).

Our cash flow tests include two control variables. We control for growth because growing firms have predictably lower cash flows due to increases in working capital and long-term capital investments. If high-growth firms are also more inclined to exclude expenses in their definition of pro forma earnings then, absent this control, our results could suffer an omitted, correlated variable problem. We define Growth as the change in sales from the same quarter in the previous year (data item #2). We also control for Accruals, defined as GAAP earnings less cash from operations. Dechow (1994), Dechow et al. (1998), and Barth et al. (2001) show that current period accruals predict future cash flows (as the accounting model is designed to do). Although different types of exclusions generate different types of accrual patterns, if enough of the exclusions are cases where the expense is booked and then excluded in

the current period, with the associated cash outflow in a future period, then without this control it is possible that the mere reversing of accruals could drive our results.[8] Putting all this together, our first set of regressions estimates the following equation:

$$\text{Future Cash Flow} = \gamma_0 + \gamma_1 \text{Pro Forma Earnings}_t + \gamma_2 \text{Exclusions}_t + \gamma_3 \text{Growth}_t + \gamma_4 \text{Accruals}_t + \upsilon_t, \quad (1)$$

where future cash flow is measured as either CFO or FCF, summed over one, two or three years starting with quarter $t+1$. All variables are calculated as per share amounts, which are then scaled by total assets per share at the end of the initial fiscal quarter (data item #9/data item #15). To limit the influence of outliers, all variables are winsorized at the 1% and 99% levels. We also estimate the relation between future cash flows and the components of total exclusions (i.e., special items and other exclusions) to examine the importance of distinguishing between the two different types of exclusions.

Estimating equation (1) in a pooled regression poses a serious econometric problem, because observations occur each quarter while the dependent variable aggregates over as many as 12 quarters. Consequently, the dependent variable has considerable overlap between observations. To control for this problem we estimate equation (1) separately for each quarter and report the mean of the resulting coefficient estimates. We then compute a *t*-statistic based on the quarterly estimates (i.e., a Fama-MacBeth *t*-statistic), multiplying the traditional standard error by the Newey-West adjustment in order to account for the possible serial correlation in the quarterly estimates.[9]

There are two relevant benchmarks for the γ_2 coefficient on Exclusions in (1). If the excluded expenses are completely irrelevant, non-recurring and have no cash consequences, then γ_2 should be zero. An alternative benchmark is the coefficient γ_1 on Pro Forma Earnings. If pro forma earnings are truly a measure of "core earnings" while exclusions are temporary and unimportant, we would expect γ_1 to be much larger in absolute value than γ_2. Further, since all variables are denominated in dollars per share and scaled by total assets per share, the coefficients in (1) can be interpreted as the future dollar cash flow implications of a dollar change in the unscaled independent variable.

1.2. Stock Return Tests

If the stock market fully anticipates the cash flow implications of a firm's pro forma earnings definition then the reaction around the earnings announcement date should completely reflect this information. Alternatively, if the market reaction is incomplete then, as the future cash flow implications materialize, future stock returns should respond accordingly.

Our first set of tests examine the relation between total exclusions and the three day stock return around the earnings announcement date, after controlling for the earnings surprise and other known determinants of stock returns. The announce-

ment period return is defined as the compounded buy-and-hold return, inclusive of dividends and other distributions, from one day before to one day after the earnings announcement date, less the return on the value-weighted market portfolio. We regress this on the earnings surprise (defined as the actual pro forma earnings per share minus the most recent median IBES earnings per share forecast prior to the earnings announcement date) and total exclusions, both scaled by total assets per share at the end of fiscal quarter t. We also include five previously documented determinants of stock returns: the book-to-market ratio, constructed as the book value of equity (data item #60) divided by the market value of equity at the end of the fiscal quarter (data item #61 times data item #14); the size of the firm, as measured by the log of the market value of equity; beta, estimated using weekly returns over the two years prior to fiscal quarter t (Fama and French, 1993); accruals, computed as GAAP earnings minus cash from operations, scaled by total assets at the end of the fiscal quarter (Sloan, 1996); and momentum, calculated as the market-adjusted stock return for the six months prior to the earnings announcement (Chan et al., 1996). The first three controls are frequently labeled "risk factors" while the last two controls are more commonly labeled as "market anomalies". If the excluded expenses in a firm's definition of pro forma earnings are indeed non-recurring and irrelevant with regard to future profitability, then the market should respond to the earnings surprise but not to the amount of total exclusions. We also estimate the regression replacing total exclusions with special items and other exclusions to examine the differential impact of the two components of the excluded expenses.

The announcement period returns reflect the market's contemporaneous reaction to the news in the pro forma earnings and excluded expenses. Our main interest, however, is in the returns subsequent to the earnings announcement. We examine the market-adjusted future returns for one, two, and three years subsequent to the earnings announcement, beginning two days after the announcement date. For firms that are delisted during our future return window, we calculate the remaining return by first using CRSP's delisting return and then reinvest any remaining proceeds in the value-weighted market portfolio.[10]

If the market's reaction to the earnings announcement fully anticipates the future cash flow implications of the firm's exclusions then there should be no significant relation between the exclusions and future stock returns. Alternatively, if the market fails to incorporate all the information from the exclusions then future returns will have a predictable relation with information that was available at the earnings announcement date.

This results in the following regression:

$$\begin{aligned}\text{Market-adjusted stock return} &= \gamma_0 + \gamma_1 \text{Earnings Surprise}_t \\ &+ \gamma_2 \text{Total Exclusions}_t + \gamma_3 \text{Book-to-Market}_t + \gamma_4 \text{Size}_t + \gamma_5 \text{Beta}_t \\ &+ \gamma_5 \text{Accruals}_t + \gamma_6 \text{Momentum}_t + \upsilon_t, \end{aligned} \tag{2}$$

where the market-adjusted stock return interval is either the three-day announcement period return, or the future return over the next one, two, or three years.

In the return tests we transform the independent variables by sorting them into deciles numbered zero to nine each month, replacing each variable with its decile rank, and then dividing the rank by nine. We rank the data monthly, rather than quarterly, because firms have different fiscal quarter ends and therefore a quarterly ranking could induce a look-ahead bias in our future return tests (but there is still only one firm observation per calendar quarter). The rank transformation yields a variable that ranges from zero to one and, more importantly, allows us to interpret the absolute value of the coefficient estimate on a variable as the hedge return from a portfolio created to optimize on the information in the variable, after controlling for the other variables in the regression (Bernard and Thomas, 1990).[11] To control for cross-sectional correlation in the regression residuals we estimate (2) separately for each of the 48 calendar quarters in our sample (44 quarters for the three-year-ahead returns) and report the mean coefficient estimates in the tables. The *t*-statistics are computed using the quarterly coefficient estimates (Fama and MacBeth, 1973) where the standard errors are adjusted for serial correlation in the estimates using the Newey-West correction (see note 9 for details).

To complement the regression tests, we examine the future returns of portfolios formed by sorting firms into deciles of exclusions each month. We report the returns to a hedge strategy that takes a long position in firms with the lowest exclusions and a short position in the firms with the highest exclusions. We also conduct randomization tests designed to control for the risk in the hedge strategy without imposing the assumptions necessary to make regression analysis valid. These tests are described in detail in the results section.

1.3. The Sample

The full sample consists of 143,462 firm-quarter observations from 1988 to 1999 with sufficient Compustat, CRSP, and IBES data for our tests. The number of observations in any particular test will vary depending on the number of future quarters of cash flows or stock returns required for the test and the availability of Compustat or CRSP data necessary for the particular test.

We also examine a subsample of 50,132 firm-quarters where total exclusions are nonzero (i.e., pro forma earnings is different from GAAP earnings). This is an important sample because 65% of the observations in the full sample have no exclusions at all (i.e., GAAP earnings equals pro forma earnings). The zero-exclusion observations improve our estimates of the impact of the other variables, but they may cause our exclusion results to be driven more by the decision to use or not use exclusions, rather than the magnitude of the exclusion. An alternative research design for our entire study would be to use only this subsample, where total exclusions are nonzero. As seen later, limiting the study to these observations gives slightly weaker results for the cash flow tests and stronger results for the future stock return tests.

Table 1 gives some descriptive statistics for our sample. As expected, the mean Pro Forma Earnings per share of 29 cents is higher than the mean GAAP Earnings per

Table 1. Descriptive statistics for full sample and sample where total exclusions $\neq 0$.

	Full Sample					Total Exclusions $\neq 0$ Sample				
Variable	Mean	Std. Dev.	25%	Median	75%	Mean	Std. Dev.	25%	Median	75%
Pro Forma Earnings	0.29	0.44	0.08	0.25	0.48	0.32	0.50	0.09	0.28	0.53
Operating Income	0.29	0.45	0.06	0.24	0.47	0.30	0.57	0.05	0.26	0.53
GAAP Earnings	0.26	0.52	0.05	0.23	0.47	0.21	0.74	0.00	0.23	0.52
Total Exclusions	0.03	0.23	0.00	0.00	0.00	0.10	0.51	−0.03	0.01	0.13
Special Items	0.03	0.15	0.00	0.00	0.00	0.09	0.35	0.00	0.00	0.02
Other Exclusions	0.00	0.14	0.00	0.00	0.00	0.02	0.30	−0.03	0.00	0.05
FCF_SUM1	0.37	2.84	−0.71	0.23	1.33	0.57	3.40	−0.71	0.28	1.55
FCF_SUM2	0.93	5.32	−1.15	0.53	2.68	1.35	6.45	−1.08	0.67	3.13
FCF_SUM3	1.73	7.86	−1.46	0.92	4.19	2.46	9.65	−1.31	1.18	5.04
CFO_SUM1	2.11	3.22	0.27	1.38	3.07	2.47	3.82	0.29	1.54	3.55
CFO_SUM2	4.55	6.31	0.77	3.02	6.50	5.32	7.54	0.85	3.39	7.49
CFO_SUM3	7.45	9.74	1.47	4.99	10.51	8.81	11.65	1.65	5.74	12.21
Earnings Surprise	−0.02	0.54	−0.03	0.00	0.03	−0.04	0.83	−0.04	0.00	0.03
RMA_3DAY	0.003	0.079	−0.031	0.000	0.034	0.001	0.078	−0.031	0.000	0.033
RMA_YR1	−0.007	0.715	−0.362	−0.087	0.191	−0.023	0.733	−0.381	−0.095	0.175
RMA_YR2	0.001	1.252	−0.594	−0.160	0.288	−0.025	1.391	−0.627	−0.182	0.253
RMA_YR3	−0.029	1.702	−0.811	−0.260	0.328	−0.047	1.940	−0.819	−0.274	0.291
Momentum	0.007	0.564	−0.259	−0.051	0.159	0.015	0.604	−0.257	−0.044	0.167
Book to Market	0.57	0.40	0.29	0.49	0.74	0.56	0.41	0.28	0.48	0.73
MVE	1932	8692	96	287	1025	2713	10,385	130	432	1549
Accruals	−0.28	1.11	−0.53	−0.12	0.12	−0.44	1.40	−0.76	−0.20	0.11
Sales Growth	0.66	1.59	0.03	0.39	1.00	0.68	2.00	−0.01	0.42	1.12
Total Assets	50.06	105.99	8.29	17.98	43.26	62.07	123.36	9.75	22.39	56.34
Beta	1.00	0.62	0.57	0.93	1.34	1.04	0.63	0.62	0.96	1.37

share of 26 cents. The mean Total Exclusion is 3 cents, but this jumps to 10 cents in the nonzero exclusions sample. Although there are more exclusions that increase pro forma earnings than decrease it, the 25th percentile of Total Exclusions in the nonzero exclusions subsample is −3 cents, so some firms certainly exclude gains in some quarters.[12] In the full sample the mean CFO for the next year is $2.11 per share but the mean FCF for the next year is only $0.37 per share, implying that the mean firm is reinvesting most of its operating cash flow into capital expenditures. The mean market-adjusted returns are close to zero for all intervals. The mean market value is $1932 million, reflecting the fact that IBES covers relatively large firms, although the dispersion in size is quite large. Mean accruals are negative, as is common, implying that in the current quarter cash from operations exceeds GAAP earnings. Finally, mean sales growth (computed as the change in sales from the same quarter a year earlier) is 66 cents per share. The nonzero exclusions sample is reasonably similar to the full sample. The mean firm size is bigger, at $2713 million, consistent with the slightly larger cash flows per share. Table 2 gives the sample composition by industry. Comparing the full sample with the nonzero exclusion sample shows that the use of pro forma reporting is not concentrated in a few industries.

The full sample consists of 143,462 firm-quarter observations from 1988 to 1999. The subsample where exclusions $\neq 0$ consists of 50,132 observations. All income and cash flow numbers are reported in Table 1 on a per share basis, but are scaled by total assets per share in all statistical tests. The variables are defined as follows: Pro Forma Earnings is the IBES reported actual earnings per share. Operating Income is the applicable basic or diluted income per share (matched to the IBES definition) before special items, extraordinary items, and discontinued operations (Compustat data item #177). Since #177 is only reported on a primary basis, we adjust it to a diluted basis by using the implied dilution factor from the most recent annual basic shares outstanding (#54) divided by annual diluted shares outstanding (#171) reported by Compustat. GAAP Earnings is the applicable basic or diluted income per share (matched to the IBES definition) before extraordinary items and discontinued operations (#19 or #9). Total Exclusions = Pro Forma Earnings – GAAP Earnings. Special Items = Operating Income – GAAP Earnings. Other Exclusions = Total Exclusions – Special Items. FCF_SUM1, 2, and 3 are calculated as cash from operations (#108) – capital expenditures (#90), scaled by the applicable weighted average shares outstanding (#15), summed for one, two or three years starting with quarter $t+1$. CFO_SUM1, 2, and 3 are cash from operations (#108) scaled by the applicable weighted average shares outstanding (#15), summed for one, two or three years starting with quarter $t+1$. Earnings Surprise is Pro Forma Earnings – IBES median forecast preceding the earnings announcement date. Returns are compounded buy and hold returns, inclusive of all distributions, less the return on a value-weighted market portfolio. RMA_3DAY is the three-day announcement period return, from one day prior to one day after the earnings announcement. RMA_YR1, RMA_YR2 and RMA_YR3 are compound buy-and-hold returns inclusive of all dividends and other distributions beginning two days after the earnings announcement and continuing for one, two or three years, respectively. In the event of delisting, CRSP's delisting return is first used, adjusting for the delisting bias documented in Shumway (1997), followed by the return on the market-value-weighted index. The Book to Market ratio is constructed as the book value of equity (#60) divided by the market value of equity at the end of the initial fiscal quarter (#61 times #14). Beta is estimated using weekly returns over the two years prior to the initial fiscal quarter. MVE represents the size of the firm and is measured by the market value of equity at the end of the initial fiscal quarter. Accruals = GAAP Earnings per share (#19) – cash from operations (#108). Sales Growth is the change in sales from quarter $t-4$ to t (#2). Momentum is the market-adjusted return for the six months prior to the earnings announcement. Total assets are defined as Total assets (#44) divided by shares outstanding (#15). All financial statement variables are winsorized at the 1% and 99% levels.

Table 2. Sample concentration by industry.

	Full Sample		Total Exclusions $\neq 0$	
Industry	No. of Observations	% of Sample	No. of Observations	% of Sample
Aircraft	482	0.34	219	0.44
Agriculture	376	0.26	124	0.25
Automobiles and trucks	2518	1.76	859	1.71
Banking	12,741	8.88	5218	10.41
Alcoholic beverages	439	0.31	129	0.26
Construction materials	2829	1.97	943	1.88
Printing and publishing	1647	1.15	589	1.17
Shipping containers	558	0.39	198	0.39
Business services	14,256	9.94	5582	11.13
Chemicals	2977	2.08	1072	2.14
Electronic equipment	7398	5.16	2497	4.98
Apparel	1902	1.33	519	1.04
Construction	1832	1.28	553	1.10
Coal	73	0.05	30	0.06
Computers	6148	4.29	2144	4.28
Pharmaceutical products	5936	4.14	1494	2.98
Electrical equipment	1145	0.80	368	0.73
Petroleum and natural gas	4763	3.32	1958	3.91
Fabricated products	452	0.32	138	0.28
Trading	2529	1.76	805	1.61
Food products	2413	1.68	810	1.62
Entertainment	1777	1.24	655	1.31
Precious metals	658	0.46	273	0.54
Defense	159	0.11	55	0.11
Healthcare	2622	1.83	998	1.99
Consumer goods	2628	1.83	741	1.48
Insurance	6400	4.46	3444	6.87
Measuring and control equip	2789	1.94	885	1.77
Machinery	4419	3.08	1376	2.74
Restaurants, hotel, motel	2700	1.88	786	1.57
Medical equipment	4436	3.09	1192	2.38
Nonmetallic mining	420	0.29	182	0.36
Miscellaneous	1052	0.73	369	0.74
Business supplies	2384	1.66	821	1.64
Personal services	1272	0.89	407	0.81
Real estate	319	0.22	106	0.21
Retail	8601	6.00	2419	4.83
Rubber and plastic products	1115	0.78	356	0.71
Shipbuilding, railroad eq	360	0.25	158	0.32
Tobacco products	151	0.11	61	0.12
Candy and soda	223	0.16	105	0.21
Steel works, Etc.	2760	1.92	946	1.89
Telecommunications	3882	2.71	1577	3.15
Recreational products	1123	0.78	327	0.65
Transportation	4049	2.82	1335	2.66
Textiles	1190	0.83	327	0.65
Utilities	7330	5.11	2312	4.61
Wholesale	5229	3.64	1670	3.33
Total Sample	**143,462**	**100**	**50,132**	**100**

Industry classifications are based on those used by Fama and French (1997).

2. Results

2.1. Future Cash Flow Test Results

The results for future CFO are given in Table 3 and for future FCF are given in Table 4. Recall that excluded expenses are defined as positive numbers, so a negative γ_2 coefficient indicates that the expenses are recurring cash flows. More precisely, γ_2 is the estimated amount of cash that will be consumed in the future per dollar of exclusion in the current period. The tables present the mean coefficients and Fama-MacBeth *t*-statistics from quarterly regressions, with the standard error adjusted for serial correlation in the estimates using the Newey-West correction (discussed in note 9). The estimates in Panel A of Table 3 show that Total Exclusions are negatively associated with future CFO, indicating that these expenses are recurring and consuming cash in the future. For instance, the first regression in Panel A shows that a dollar of pro forma earnings in the current quarter is associated with 2.698 dollars of future CFO over the next year. However, a dollar of Total Exclusions is associated with -1.120 fewer dollars of future CFO over the next year. Not only is the γ_2 coefficient statistically different from zero, in absolute value it is almost half of the value of the coefficient on Pro Forma Earnings. Note also that the coefficient estimates on Pro Forma Earnings and on Total Exclusions grow in approximate proportion with the length of the future period. The estimates using the next two or three years of CFO are roughly two and three times larger than the estimates in the regression using the next one year, respectively. The results are very similar for the sample of firms with nonzero exclusions. The exclusions hardly appear to be non-recurring, non-cash and unimportant.

As expected, future CFO declines with Accruals. Note that Pro Forma Earnings and Total Exclusions together capture GAAP earnings, so the accrual result is that, given GAAP earnings, a relatively high level of accruals (often labeled as low quality earnings) predicts lower future cash flows. The negative sign on Accruals in all our cash flow regressions is consistent with Dechow et al. (1998) and Barth et al. (2001).[13] More importantly, Accruals controls for the mechanical relation between expenses that were accrued in the current period and consume cash in the future period when they reverse. The coefficient on Total Exclusions captures the incremental consumption of cash in the future beyond the mere reversing of accrued expenses.[14] The relation between Growth and future CFO is mixed in Table 3 but is significantly negatively related to FCF, as shown in Table 4.

The difference between the two types of exclusions is seen in Table 3, Panel B. Consider the first regression. The coefficient estimates on Pro Forma Earnings are similar to those in Panel A. In contrast, the regression shows that when exclusions are decomposed into Special Items and Other Exclusions, Special Items are unrelated to future CFO but Other Exclusions have a pronounced negative relation with future CFO. The coefficient on Other Exclusions is almost as large in absolute value as the coefficient on Pro Forma Earnings. A dollar of Pro Forma Earnings predicts 2.795 dollars of future CFO in the next year and a dollar of Other Exclusions predicts -2.185 dollars of future CFO. Not only do Other Exclusions recur and consume

Table 3. Quarterly regressions of future cash from operations on total exclusions and components of total exclusions.

Panel A: Total Exclusions: Future CFO $= \gamma_0 + \gamma_1$ *Pro Forma Earnings*$_t + \gamma_2$ *Total Exclusions*$_t + \gamma_3$ *Sales Growth*$_t + \gamma_4$ *Accruals*$_t + \upsilon_t$

Dependent Variable	Intercept	Pro Forma Earnings	Total Exclusions	Sales Growth	Accruals	Adj. R^2
			Full Sample			
CFO_SUM1	0.054	2.698	**− 1.120**	− 0.103	− 0.540	0.366
	(23.64)	(34.40)	**(− 10.37)**	(− 4.75)	(− 20.42)	
CFO_SUM2	0.121	5.304	**− 2.210**	− 0.096	− 1.066	0.380
	(28.59)	(34.19)	**(− 8.43)**	(− 1.48)	(− 20.30)	
CFO_SUM3	0.199	7.895	**− 3.328**	0.006	− 1.584	0.351
	(40.64)	(34.79)	**(− 6.42)**	(0.059)	(− 18.53)	
			Subsample where Total Exclusions $\neq 0$			
CFO_SUM1	0.055	2.285	**− 0.853**	− 0.033	− 0.600	0.293
	(20.25)	(21.76)	**(− 12.86)**	(− 1.33)	(− 19.62)	
CFO_SUM2	0.122	4.515	**− 1.664**	0.044	− 1.141	0.308
	(23.52)	(23.83)	**(− 13.19)**	(− 13.19)	(− 17.75)	
CFO_SUM3	0.202	6.723	**− 2.433**	0.242	− 1.686	0.286
	(24.60)	(18.50)	**(−11.81)**	(2.04)	(− 20.08)	

Panel B: Components of Total Exclusions: Future CFO $= \gamma_0 + \gamma_1$*Pro Forma Earnings*$_t + \gamma_2$ *Special Items*$_t + \gamma_3$*Other Exclusions*$_t + \gamma_4$*Sales Growth*$_t + \gamma_5$*Accruals*$_t + \upsilon_t$

Dependent Variable	Intercept	Pro Forma Earnings	Special Items	Other Exclusions	Sales Growth	Accruals	Adj. R^2
				Full Sample			
CFO_SUM1	0.053	2.795	**0.199**	**− 2.185**	− 0.117	− 0.491	0.374
	(25.63)	(49.81)	**(0.86)**	**(− 25.34)**	(− 5.94)	(− 16.19)	
CFO_SUM2	0.119	5.473	**0.309**	**− 4.263**	− 0.122	− 0.971	0.387
	(32.34)	(49.83)	**(0.63)**	**(− 22.49)**	(− 2.06)	(− 15.11)	
CFO_SUM3	0.196	8.184	**0.781**	**− 6.422**	− 0.040	− 1.454	0.358
	(48.89)	(56.61)	**(0.84)**	**(− 13.56)**	(− 0.43)	(− 13.47)	
				Subsample where Total Exclusions $\neq 0$			
CFO_SUM1	0.054	2.394	**− 0.008**	**− 1.466**	− 0.050	− 0.520	0.298
	(22.19)	(34.40)	**(− 0.03)**	**(− 16.75)**	(− 2.25)	(− 16.86)	
CFO_SUM2	0.122	4.698	**0.075**	**− 2.876**	0.008	− 0.980	0.313
	(25.88)	(39.98)	**(0.14)**	**(− 14.95)**	(0.15)	(− 13.80)	
CFO_SUM3	0.200	7.090	**0.134**	**− 4.169**	0.173	− 1.455	0.294
	(27.52)	(31.07)	**(0.16)**	**(− 9.18)**	(1.91)	(− 11.88)	

The full sample consists of 143,462 firm-quarter observations in quarter t from 1988 to 1999. The subsample where Total Exclusions $\neq 0$ consists of 50,132 observations. CFO_SUM1, 2, and 3 are cash from operations (#108) scaled by the applicable weighted average shares outstanding (#15), summed for one, two or three years starting with quarter $t + 1$. Other variables are defined in Table 1. The variables are per share amounts, which are then scaled by total assets per share at the end of the fiscal quarter. Regressions are estimated quarterly and mean coefficients are presented. Fama-MacBeth t-statistics, adjusted for serial correlation using the Newey-West correction (see note 9 for details), are shown in parentheses below the coefficients.

Table 4. Quarterly regressions of future free cash flows on total exclusions and components of total exclusions.

Panel A: Total Exclusions: Future Free Cash Flow $= \gamma_0 + \gamma_1$ *Pro Forma Earnings*$_t + \gamma_2$ *Total Exclusions*$_t + \gamma_3$ *Sales Growth*$_t + \gamma_4$ *Accruals*$_t + \upsilon_t$

Dependent Variable	Intercept	Pro Forma Earnings	Total Exclusions	Sales Growth	Accruals	Adj. R^2
			Full Sample			
FCF_SUM1	−0.018	2.396	**−0.665**	−0.294	−0.278	0.247
	(−4.77)	(20.73)	**(−7.38)**	(−12.53)	(−11.29)	
FCF_SUM2	−0.027	4.582	**−1.255**	−0.514	−0.469	0.254
	(−3.04)	(18.46)	**(−4.88)**	(−8.39)	(−8.03)	
FCF_SUM3	−0.029	6.574	**−1.660**	−0.674	−0.613	0.231
	(−1.98)	(16.39)	**(−3.38)**	(−6.62)	(−6.59)	
			Subsample where Total Exclusions $\neq 0$			
FCF_SUM1	−0.012	1.953	**−0.596**	−0.218	−0.371	0.182
	(−3.35)	(13.27)	**(−7.37)**	(−11.28)	(−12.65)	
FCF_SUM2	−0.013	3.693	**−1.09**	−0.389	−0.594	0.178
	(−1.49)	(11.57)	**(−9.13)**	(−7.58)	(−8.42)	
FCF_SUM3	−0.005	5.189	**−1.409**	−0.466	−0.766	0.155
	(−0.31)	(9.82)	**(−6.03)**	(−4.83)	(−6.94)	

Panel B: Components of Total Exclusions: Future Free Cash Flow $= \gamma_0 + \gamma_1$ *Pro Forma Earnings*$_t + \gamma_2$ *Special Items*$_t + \gamma_3$ *Other Exclusions*$_t + \gamma_4$ *Sales Growth*$_t + \gamma_5$ *Accruals*$_t + \upsilon_t$

Dependent Variable	Intercept	Pro Forma Earnings	Special Items	Other Exclusions	Sales Growth	Accruals	Adj. R^2
				Full Sample			
FCF_SUM1	−0.019	2.498	**0.746**	**−1.829**	−0.308	−0.234	0.257
	(−5.31)	(27.47)	**(2.95)**	**(−13.27)**	(−12.75)	(−9.81)	
FCF_SUM2	−0.029	4.749	**1.364**	**−3.431**	−0.532	−0.386	0.262
	(−3.57)	(24.21)	**(3.08)**	**(−14.34)**	(−8.32)	(−6.54)	
FCF_SUM3	−0.033	6.852	**2.603**	**−4.943**	−0.704	−0.502	0.241
	(−2.50)	(22.60)	**(3.33)**	**(−9.93)**	(−6.80)	(−5.02)	
				Subsample where Total Exclusions $\neq 0$			
FCF_SUM1	−0.013	2.059	**0.422**	**−1.264**	−0.238	−0.309	0.192
	(−3.59)	(18.31)	**(1.35)**	**(−10.81)**	(−11.94)	(−11.12)	
FCF_SUM2	−0.013	3.82	**0.648**	**−2.264**	−0.421	−0.467	0.186
	(−1.54)	(14.90)	**(1.39)**	**(−10.35)**	(−8.21)	(−6.56)	
FCF_SUM3	−0.008	5.473	**1.112**	**−3.095**	−0.517	−0.604	0.167
	(−0.53)	(13.44)	**(1.48)**	**(−6.17)**	(−5.70)	(−4.90)	

The full sample consists of 143,462 firm-quarter observations in quarter t from 1988 to 1999. The subsample where Total Exclusions $\neq 0$ consists of 50,132 observations. FCF_SUM1, 2, and 3 are calculated as cash from operations (#108) – capital expenditures (#90), scaled by the applicable weighted average shares outstanding (#15), summed for one, two or three years starting with quarter $t+1$. Other variables are defined in Table 1. The variables are per share amounts, which are then scaled by total assets per share at the end of the fiscal quarter. Regressions are estimated quarterly and mean coefficients are presented. Fama-MacBeth t-statistics, adjusted for serial correlation using the Newey-West correction (see note 9 for details), are shown in parentheses below the coefficients.

cash in the future, they recur with almost the same degree of permanence as the pro forma earnings number itself. Further, the *t*-statistics on Other Exclusions are more than twice as large as the *t*-statistics on Total Exclusions given in Panel A. The sample of firms with nonzero exclusions gives very similar results, as shown in the bottom half of panel B. In sum, the relation between exclusions and future CFO is driven by the Other Exclusions component, and Other Exclusions are significantly negatively related to future CFO. Although Special Items have no significant relation with future CFO, the next table offers some mixed evidence that they are positively related to future FCF.

Very similar patterns of results emerge when we use future FCF as the dependent variable, as seen in Table 4. The coefficient on Total Exclusions is significantly negative for all three time periods and both samples in panel A, ranging between 25 and 30% of the magnitude of the coefficient on Pro Forma Earnings. As with the CFO tests, when we decompose the exclusions variable into its two parts, the negative relation with future FCF is completely due to the Other Exclusions component. And, in contrast to the CFO tests, Special Items has a significantly positive coefficient in the full sample. For example, a dollar of Special Items predicts 0.746 more dollars of FCF in the next year, while a dollar of Other Exclusions predicts 1.829 fewer dollars of FCF. When compared to the coefficient on Pro Forma Earnings of 2.498, these are large effects. Recalling that Special Items were unrelated to future CFO, the positive relation between FCF and Special Items in these regressions effectively means that firms with excluded Special Items have lower capital expenditures in the future. The results are very similar in the sample of firms with nonzero exclusions, as shown on the bottom half of each panel, with the exception of the Special Items variable, which becomes insignificant. As expected, Growth and Accruals are both negatively related to future FCF for all periods and in both samples.

The results from Tables 3 and 4 provide strong evidence that the expenses excluded from the firm's definition of pro forma earnings have significant explanatory power for forecasting future cash flows. In fact, Other Exclusions is almost as predictive as Pro Forma Earnings. Given these results it is hard to conclude that Pro Forma Earnings is a core measure of performance and Other Exclusions should be ignored. Statistically and economically, there is little difference between the predictive ability of the two variables.[15]

2.2. Stock Return Results

Our next set of tests examines the stock market response to pro forma earnings and the exclusions, and whether a profitable hedge portfolio can be formed based on the excluded expenses. As discussed earlier, each variable is sorted into deciles, replaced with its decile rank ranging from zero to nine and then divided by nine, resulting in a variable with ten ordered categories ranging from zero to one. Regressions are estimated quarterly; the tables give the mean coefficient and Fama-MacBeth

t-statistics, with the standard error adjusted for serial correlation in the estimates using the Newey-West correction (discussed in the previous section).

We begin with a brief examination of the three-day announcement period return. The first regression in Table 5 shows that the announcement period return is positively associated with the pro forma Earnings Surprise, but negatively related to the Total Exclusions. The market obviously rewards positive earnings surprises, but the reward is diminished if the surprise is achieved by the use of exclusions in the definition of pro forma earnings. The first regression in Table 6, where Special Items and Other Exclusions are treated separately, yields a similar conclusion. The three-day return is positively related to the Earnings Surprise but is negatively related to both Other Exclusions and excluded Special Items. These results are consistent across both the full sample, shown at the top of each table, and the sample of firm quarters with nonzero exclusions, shown at the bottom of each table.

The announcement period findings complement the results in Brown and Sivakumar (2001). They find that the coefficient and R^2 in a simple regression of the three-day announcement period return on the earnings surprise are higher when the realization is based on pro forma earnings than when it is based on GAAP earnings, concluding that the pro forma number is more value-relevant. The Brown and Sivakumar results say that, if you have to pick one earnings measure, the market responds more to the pro forma earnings than to the GAAP earnings. Our results show that the two pieces of GAAP earnings—the pro forma amount and the amount of exclusions—are both relevant, but with different magnitudes, so adding them together in GAAP earnings diminishes their joint information content.

Although the market responds to the exclusions, the more important question is whether the reaction is complete. Table 5 also examines the subsequent returns starting two days after the earnings announcement and continuing for either one, two, or three years. Because of the decile ranking procedure, the absolute value of the coefficient on each variable represents the return available by forming a hedge portfolio based on the extreme deciles of that variable, after controlling for the other variables in the regression. As seen in Table 5, the coefficient on Total Exclusions is significantly negative for each of the three return windows in both the full sample and the nonzero exclusion sample. For example, in the nonzero exclusion sample, the three year returns for firms in the top decile of Total Exclusions are estimated to be 24.7% lower than then returns for firms in the bottom decile of Total Exclusions; equivalently, the three-year hedge portfolio based on Total Exclusions would earn 24.7% with no exposure to market-wide price movements and after controlling for the earnings surprise, the book-to-market effect, size, beta, accruals and price momentum. The results for the full sample are similar, although of lower magnitude. In sum, although the market reacts negatively to exclusions in the announcement period, the reaction is not sufficient. The returns for up to three years after the earnings announcement are decreasing as the amount of excluded expenses increase, and at magnitudes that are both statistically and economically significant.

The three risk control variables in the returns regression show results consistent with prior literature. Book-to-Market and Beta are positively related to returns and

Table 5. Quarterly regressions of announcement period returns and future returns on decile-ranked total exclusions and control variables.

Return Interval $= \gamma_0 + \gamma_1$ *Earnings Surprise*$_t$ $+\gamma_2$ *Total Exclusions*$_t$ $+\gamma_3$ *Book to Market*$_t$ $+\gamma_4$ *Log of MVE*$_t$ $+\gamma_5$ *Firm Beta*$_t$ $+\gamma_6$ *Accruals*$_t$ $+\gamma_7$ *Momentum*$_t$ $+\upsilon_t$

Dependent Variable	Intercept	Earnings Surprise	Total Exclusions	Book to Market	Log of MVE	Firm Beta (β_i)	Accruals	Momentum	Adj. R^2
				Full Sample					
RMA_3Day	−0.014	0.058	**−0.013**	0.004	−0.003	0.000	−0.003	−0.012	0.0667
	(−7.68)	(30.81)	**(−10.37)**	(3.05)	(−1.86)	(0.23)	(−3.55)	(−7.86)	
RMA_YR1	−0.040	0.124	**−0.057**	0.015	−0.080	0.104	−0.105	0.079	0.0386
	(−0.96)	(10.58)	**(−6.78)**	(0.28)	(−1.29)	(1.74)	(−6.45)	(4.44)	
RMA_YR2	−0.046	0.204	**−0.098**	0.043	−0.121	0.220	−0.153	0.017	0.0300
	(−0.46)	(14.32)	**(−5.87)**	(0.40)	(−1.56)	(1.91)	(−6.68)	(0.43)	
RMA_YR3	−0.124	0.247	**−0.113**	0.088	−0.126	0.327	−0.175	0.006	0.0229
	(−0.96)	(9.80)	**(−5.15)**	(0.58)	(−1.37)	(2.99)	(−6.56)	(0.15)	
				Subsample where Total Exclusions $\neq 0$					
RMA_3Day	−0.009	0.049	**−0.020**	0.001	0.001	−0.001	−0.005	−0.007	0.0496
	(−3.29)	(25.80)	**(−10.27)**	(0.68)	(0.83)	(−0.38)	(−3.36)	(−3.20)	
RMA_YR1	−0.069	0.129	**−0.077**	0.043	−0.059	0.098	−0.106	0.106	0.0442
	(−2.72)	(7.17)	**(−5.88)**	(0.98)	(−1.07)	(1.62)	(−6.82)	(4.06)	
RMA_YR2	−0.017	0.199	**−0.145**	0.054	−0.122	0.196	−0.173	0.042	0.0337
	(−0.20)	(7.91)	**(−9.84)**	(0.50)	(−1.58)	(1.34)	(−7.39)	(1.06)	
RMA_YR3	0.047	0.281	**−0.247**	0.071	−0.180	0.254	−0.215	−0.009	0.0259
	(0.29)	(5.42)	**(−14.02)**	(0.37)	(−2.02)	(1.58)	(−4.66)	(−0.21)	

The full sample consists of 143,462 firm-quarter observations in quarter t from 1988 to 1999. The subsample where Total Exclusions $\neq 0$ consists of 50,132 observations. RMA_YR1, RMA_YR2 and RMA_YR3 are compound buy-and-hold returns inclusive of all dividends and other distributions beginning two days after the earnings announcement and continuing for one, two or three years, respectively. In the event of delisting, CRSP's delisting return is first used, adjusting for the delisting bias documented in Shumway (1997), followed by the return on the market-value-weighted index. The other variables are defined in Table 1. Variables are ranked monthly and assigned to deciles. The continuous value of the variables is replaced by decile-rank in the regressions. The financial statement variables are per share amounts, which are then scaled by total assets per share at the end of the fiscal quarter. Regressions are estimated quarterly and mean coefficients are presented. Fama-MacBeth t-statistics, adjusted for serial correlation using the Newey-West correction (see note 9 for details), are shown in parentheses below the coefficients.

Size is negatively related to returns, although none are highly significant. The Book-to-Market variable is never significantly related to future returns in Table 5, but in untabulated results we find that it is significantly positive in a simple regression of returns on Book-to-Market (for all three intervals). The accruals anomaly and the price momentum anomaly are also present in our tests. In the nonzero exclusions sample, a hedge portfolio based on total accruals returns 10.6% after one year, 17.3% after two years and 21.5% after three years, estimates that are very close to the original results in Sloan (1996). Ex ante one might have thought that firms with "low quality" accruals would also have "low quality" exclusions, and the two variables would identify the same underlying effect. It is therefore noteworthy that the results in Table 5 show that the two effects are largely independent. There is evidence of

Table 6. Quarterly regressions of announcement period returns and future returns on decile-ranked components of exclusions and control variables.

Return Interval $= \gamma_0 + \gamma_1$ *Earnings Surprise*$_t$ $+\gamma_2$ *Special Items*$_t$ $+\gamma_3$ *Other Exclusions*$_t$ $+\gamma_4$ *Book to Market*$_t$ $+\gamma_5$ *Log of MVE*$_t$ $+\gamma_6$ *Firm Beta*$_t$ $+\gamma_7$ *Accruals*$_t$ $+\gamma_8$ *Momentum*$_t$ $+\upsilon_t$

Dependent Variable	Intercept	Earnings Surprise	Special Items	Other Exclusions	Book to Market	Log of MVE	Firm Beta (β_i)	Accruals	Momentum	Adj. R^2
				Full Sample						
RMA_3DAY	−0.012	0.059	**−0.004**	**−0.013**	0.005	−0.003	−0.000	−0.003	−0.012	0.0681
	(−5.86)	(31.09)	**(−2.38)**	**(−9.27)**	(3.30)	(−2.07)	(−0.10)	(−3.55)	(−7.65)	
RMA_YR1	−0.032	0.126	**−0.012**	**−0.062**	0.020	−0.081	0.108	−0.106	0.076	0.0403
	(−0.74)	(10.40)	**(−0.94)**	**(−8.44)**	(0.38)	(−1.27)	(1.80)	(−6.68)	(4.22)	
RMA_YR2	−0.030	0.212	**−0.025**	**−0.108**	0.054	−0.123	0.233	−0.162	0.012	0.0311
	(−0.30)	(15.16)	**(−0.72)**	**(−6.75)**	(0.52)	(−1.52)	(2.03)	(−7.73)	(0.30)	
RMA_YR3	−0.105	0.259	**−0.001**	**−0.161**	0.112	−0.140	0.364	−0.183	−0.011	0.0236
	(−0.85)	(8.48)	**(−0.02)**	**(−4.90)**	(0.78)	(−1.40)	(3.51)	(−7.19)	(−0.32)	
				Subsample where Total Exclusions $\neq 0$						
RMA_3DAY	−0.008	0.049	**−0.005**	**−0.019**	0.002	0.001	−0.001	−0.003	−0.008	0.0499
	(−2.62)	(24.29)	**(−2.10)**	**(−8.12)**	(1.18)	(0.59)	(−0.47)	(−2.39)	(−3.40)	
RMA_YR1	−0.070	0.132	**−0.004**	**−0.083**	0.049	−0.059	0.103	−0.101	0.104	0.0478
	(−2.38)	(6.91)	**(−0.27)**	**(−6.67)**	(1.12)	(−1.02)	(1.74)	(−5.63)	(4.03)	
RMA_YR2	−0.006	0.203	**−0.032**	**−0.149**	0.065	−0.119	0.219	−0.171	0.029	0.0365
	(−0.08)	(7.29)	**(−0.69)**	**(−9.10)**	(0.62)	(−1.45)	(1.53)	(−6.37)	(0.74)	
RMA_YR3	0.026	0.290	**0.004**	**−0.312**	0.122	−0.171	0.319	−0.200	−0.039	0.0261
	(0.19)	(4.71)	**0.07**	**(−9.04)**	(0.72)	(−1.92)	(2.38)	(−4.04)	(−1.42)	

The full sample consists of 143,462 firm-quarter observations in quarter t from 1988 to 1999. The subsample where Total Exclusions $\neq 0$ consists of 50,132 observations. RMA_YR1, RMA_YR2 and RMA_YR3 are compound buy-and-hold returns inclusive of all dividends and other distributions beginning two days after the earnings announcement and continuing for one, two or three years, respectively. In the event of delisting, CRSP's delisting return is first used, adjusting for the delisting bias documented in Shumway (1997), followed by the return on the market-value-weighted index. The other variables are defined in Table 1. Variables are ranked monthly and assigned to deciles. The continuous value of the variables is replaced by the monthly decile-rank in the regressions. The financial statement variables are per share amounts, which are then scaled by total assets per share at the end of the fiscal quarter. Regressions are estimated quarterly and mean coefficients are presented. Fama-MacBeth t-statistics, adjusted for serial correlation using the Newey-West correction (see note 9 for details), are shown in parentheses below the coefficients.

price momentum in the one-year future returns; the hedge return is 10.6% in the nonzero exclusions sample. Finally, the post-earnings announcement drift effect is present in our results, as evidenced by the large significant coefficients on the Earnings Surprise variable in the future returns regressions. Other papers have documented price drift relative to analyst forecast errors (Mendenhall, 1991; Abarbanell and Bernard, 1992; Shane and Brous, 2001; Liang, 2003) but these studies only examine drift for a year or less subsequent to the surprise quarter. We find that the effect continues for return intervals two and three years after the surprise.

The results in Table 5 are not driven by a few unusual time periods. Annual estimates of the Table 5 regressions using the nonzero exclusions sample yield negative coefficients on Total Exclusions in 11 out of 12 years for returns one year in the future, in 12 out of 12 years for the returns two years in the future and in 11 out of 11 years for returns three years in the future. For the full sample, the coefficient is negative in 12 out of 12 years for returns one or two years in the future, and in 10 out of 11 years for returns three years in the future.

We replace the Total Exclusions variable with its two components, Special Items and Other Exclusions, in Table 6. As seen in the table, the coefficient on Special Items is insignificant in all regressions and the coefficient on Other Exclusions is significantly negative in all regressions. As with the cash flow tests, the predictive power of exclusions is concentrated in the Other Exclusions component. The magnitudes of the Other Exclusions coefficients are similar to the results for Total Exclusions in Table 6, with the more extreme results coming from the nonzero exclusions sample. Firms in the top decile of Other Exclusions have estimated returns over the next three years that are 31.2% lower than the returns in the lowest decile of Other Exclusions. Estimating the Table 6 regressions annually using the nonzero exclusions sample, the coefficient on Other Exclusions is negative in 11 out of 12 years for one-year future returns, is negative in 12 out of 12 years for two-year future returns and is negative in 11 out of 11 years for three-year future returns.

We conduct two specification checks for the future return regressions at this point; the next section examines the hedge returns more closely. First, because the distinction between Special Items and Other Exclusions may not always be clear at the earnings announcement date, we rerun the tests with the future returns window starting 45 days after the fiscal quarter end, reasoning that the complete SEC filing is typically available by then. Both the coefficient estimates and the statistical significance of the results are very similar to those reported in Tables 5 and 6. For instance, for three-year future returns in the nonzero exclusions sample, the coefficient on Total Exclusions is -0.217 and the coefficient on Other Exclusions is -0.263, and both estimates are negative in 11 out of 11 years. Second, to ensure that our results are not driven by a subset of highly illiquid firms, we rerun all our tests using only observations with a market capitalization greater than \$100 million (dropping roughly the bottom quartile of observations from the full sample). The results are very similar to those reported. For instance, for the three-year future returns in the nonzero exclusions sample, the coefficient on Total Exclusions is

-0.210 and the coefficient on Other Exclusions is -0.291. The estimates are negative in 10 out of 11 years for Total Exclusions and are negative in 11 out of 11 years for Other Exclusions.

2.3. Hedge Portfolio Returns

The regression tests presented in Tables 5 and 6 are an excellent way to test for return anomalies while controlling for risk factors and other known anomalies. However, to implement an investment strategy that would replicate the returns implied by the coefficients the portfolio would have to take a small positive or negative position in every firm. Further, the regression imposes a linear relation across the entire range of data that may not correspond to the true relation between the decile-ranked independent variables and future returns. To complement the regression results, Table 7 documents the returns in all ten portfolios created by decile-ranking firms each month based on their exclusions (although each firm will only have one observation per calendar quarter). Each portfolio is held for one, two or three years, starting two days after the earnings announcement date. The hedge return is the mean return in the lowest decile less the mean return in the highest decile. All results are based on the nonzero exclusion sample.

Panel A of Table 7 shows the future returns for portfolios formed by decile-ranking firms based on Total Exclusions. While there is no clear ordering of one-year ahead returns, the results for two and three years ahead present a relatively clear picture. Total Exclusions in the lowest decile are all negative, meaning that pro forma earnings is less than GAAP earnings for these firms. The returns over the next two and three years for this decile are large and positive. As Total Exclusions increases, the subsequent returns generally fall and become negative, although not monotonically. The most notable exception to this pattern is in the tenth decile, where returns are once again positive. This is partly due to the confounding positive influence of the Special Items component of Total Exclusions in the top decile. In particular, we find in untabulated results that the highest decile of Special Items has a return of 10.1%.[16] Nonetheless, the three-year hedge return based on Total Exclusions is still 11.3%.

Panel B of Table 7 ranks firms based on Other Exclusions. As in Panel A, the results for returns one year ahead are unclear, improve for returns two years ahead, and are very strong for three years ahead. The three-year returns diminish reasonably smoothly as the decile rank increases, and the hedge return is 29.9%. Removing the special items component of exclusions results in a much more powerful sorting of firms. It is interesting to note that the hedge returns are due to both the superior performance of firms in the lowest decile and the inferior performance of firms in the highest decile. Firms in the lowest decile of Other Exclusions report conservative pro forma earnings (i.e., less than GAAP earnings) and subsequently have positive returns, while firms in the highest decile of Other Exclusions report aggressive pro forma earnings (i.e., more than GAAP earnings) and subsequently have negative returns.

Table 7. Mean returns by decile of Total Exclusions or Other Exclusions.

Panel A: Portfolios constructed on Total Exclusions			
Portfolio Rank	RMA_YR1(%)	RMA_YR2(%)	RMA_YR3(%)
Low	2.2	7.7	13.2
2	−0.8	1.6	4.9
3	−4.4	−1.4	−1.5
4	−3.2	−1.6	−0.1
5	−1.3	−2.1	−0.1
6	−1.1	−3.9	−6.3
7	−2.3	−7.0	−10.3
8	−3.9	−5.8	−8.9
9	−0.7	−1.2	−8.8
High	−1.4	5.4	1.9
Hedge Return	3.6	2.3	11.3
Randomization Results	8/1000	202/1000	16/1000
(p-value)	(0.008)	(0.202)	(0.016)
Panel B: Portfolios constructed on Other Exclusions			
Portfolio Rank	RMA_YR1(%)	RMA_YR2(%)	RMA_YR3(%)
Low	2.6	7.6	17.3
2	−1.2	3.0	3.6
3	−4.1	−0.8	0.0
4	2.8	2.4	0.1
5	−4.4	−5.9	−1.2
6	−2.6	−1.2	−1.4
7	−3.4	−1.6	−1.9
8	−1.2	−5.2	−9.5
9	−2.8	−8.4	−14.8
High	−1.8	2.6	−12.6
Hedge Return	4.4	5.0	29.9
Randomization Results	7/1000	76/1000	1/1000
(p-value)	(0.007)	(0.076)	(0.001)

The subsample where Total Exclusions $\neq 0$ consists of 50,132 observations in quarter t from 1988 to 1999. Total Exclusions and Other Exclusions are ranked monthly and assigned to deciles. The Hedge Return is computed as the return on the lowest decile less the return on the highest decile. Randomization tests are used to calculate the p-values. For each observation in the sample we randomly select an observation from the same size decile, book-to-market decile, and calendar quarter, creating a pseudo-sample. We then calculate the hedge return from this new portfolio, repeating this process 999 times, to create a distribution of risk-matched hedge returns. The p-value of the test is $(NGE + 1)/ 1000$, where NGE is the number of times the pseudo-sample hedge return is greater or equal to the true sample hedge return.

Figure 1 graphs the three-year-ahead hedge portfolio returns each year from 1988 to 1998. While the returns are generally larger in the later years of the sample period, they are positive in 10 out of 11 years in both graphs.

The hedge returns in Table 7 are market-neutral, in the sense that they are long and short the same amount in the same time period. However, it is possible that sorting by exclusions also sorts firms by risk characteristics. The previous regression results controled for risk, and other known anomalies, but did so by imposing a linear relation on the data. To examine whether the hedge results in Table 7 are attributable to risk characteristics, we conduct the randomization tests described in Barber et al. (1999). In particular, for each observation in our nonzero exclusion sample, we randomly select a firm from the same calendar quarter that is in the same book-to-market and size decile and compute the one, two and three year ahead returns for that randomly selected firm. Using this pseudo-sample, we then construct a pseudo-hedge portfolio where the decile-ranking is based on the ranking in our true sample. If our original decile ranking is really just sorting firms on risk

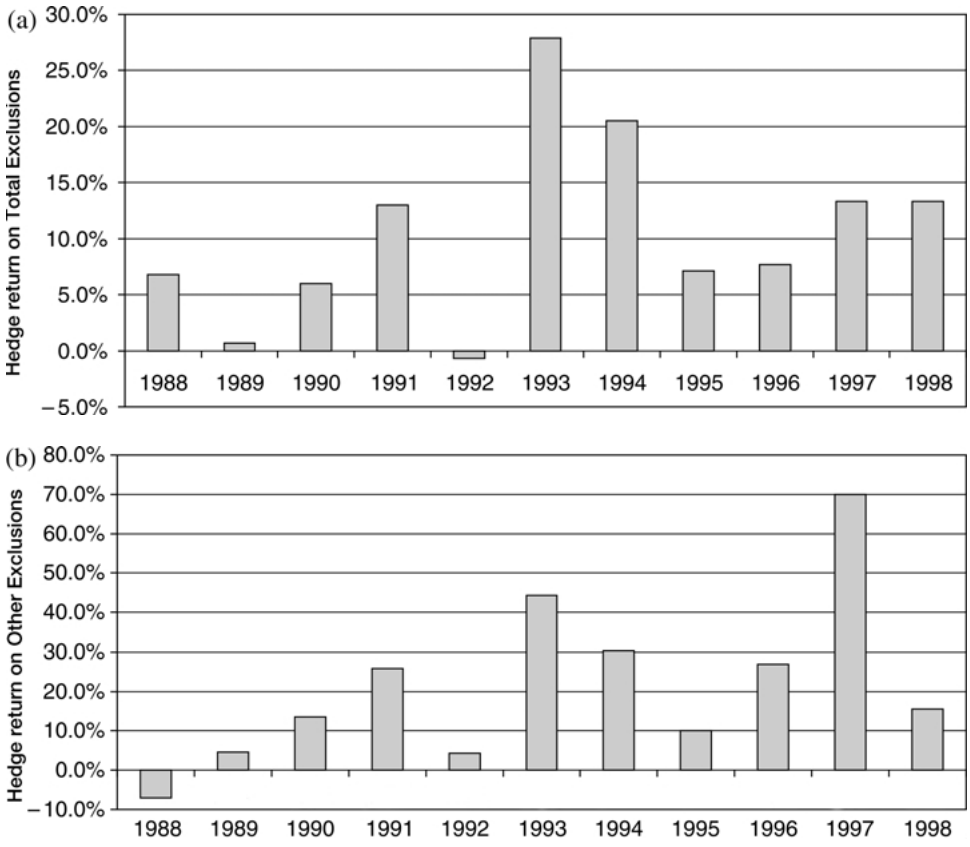

Figure 1. Returns are shown by calendar year for a hedge portfolio taking a long position in firms in the lowest decile of Total Exclusions (Other Exclusions) and a short position in firms in the highest decile of Total Exclusions (Other Exclusions). Returns are compound buy-and-hold raw returns less the value-weighted market portfolio over a three-year period beginning two days after the quarterly earnings announcement. In the event of delisting, CRSP's delisting return is first used, adjusting for the delisting bias documented in Shumway (1997), followed by the return on the market-value-weighted index.

characteristics, then the returns on the pseudo-hedges will be similar to the returns in Table 7. We repeat this process 999 times. The *p*-value of the test is then (NGE + 1)/1000, where NGE is the number of times the pseudo-hedge return is greater than or equal to the actual hedge return. The three-year hedge return of 11.3% based on Total Exclusions and the 29.9% hedge return based on Other Exclusions are significantly greater than the return on a portfolio matched on book-to-market and size, with *p*-values of 0.016 and 0.001, respectively.

Table 7 shows that most of the hedge return occurs in the third year after portfolio formation, although the regression results show a more even realization of future returns. We conjecture that this anomaly persists for such a long time because, unlike accrual manipulation, there is no future reversal that investors can easily identify. Consequently, in the short term, high exclusion firms continue to "fool the market."[17]

As a final test, we examine whether the future hedge returns are realized disproportionately around future earnings announcements. We decompose the hedge return in each decile portfolio into a future announcement period return and a non-announcement period return, where the announcement periods are three-day return windows centered on the future quarterly earnings announcements and the non-announcement periods are all remaining trading days. As a benchmark, the cumulative announcement periods are approximately 5% of the total number of trading days in each year [(4 quarters × 3 days)/250 trading days]. For the lowest decile of Total Exclusions (those firms with the highest expected future returns), we find that between 25% and 34% of the total future return is realized during the announcement period, depending on the future horizon. However, for the highest decile of Total Exclusions (those with the lowest expected returns) we find no disproportionate amount of the return realized in the future announcement periods. A likely explanation for why we find the future returns concentrated in the earnings announcement period for the lowest decile but not the highest decile is that firms are more likely to preempt bad news with more timely disclosures than they are to preempt good news, as shown in Chambers and Penman (1984) and Skinner (1994). Since we know from our cash flow tests that firms in the highest decile of Total Exclusions are also more likely to have bad news in the future, these preemptive disclosures after this group of firms disproportionately.[18]

3. Conclusion

Our results show that the current regulatory concern about the use of pro forma earnings may be warranted. The expenses that are excluded in a firm's definition of pro forma earnings predict lower future cash flows and are negatively related to future stock returns. While the market appears to partially price the information contained in the exclusions, the reaction at the earnings announcement is far from complete. The three-year return for firms in the top decile of Other Exclusions is 29.9% lower than the return for firms in the bottom decile. This estimate increases to 31.2% in a regression that controls for risk factors, post-announcement drift, the accruals anomaly and the price momentum anomaly. It is likely that the negative

future returns are caused by the predictably lower future cash flows. In the nonzero exclusion sample, one dollar of Other Exclusions in a quarter predicts 4.17 fewer dollars of cash from operations over the next three years, as compared to the 7.09 dollars predicted by a dollar of pro forma earnings. While Other Exclusions are not as permanent as pro forma earnings, they are far from being unimportant, non-recurring, or non-cash.

Our work extends prior studies of pro forma earnings. Bhattacharya et al. (2002), Bradshaw and Sloan (2002), and Brown and Sivakumar (2001) conclude that the market responds more to pro forma earnings than to GAAP earnings. In smaller samples, Johnson and Schwartz (2001) and Lougee and Marquardt (2002) find no significant difference in the contemporaneous market pricing of firms that report pro forma earnings versus those that do not. Collectively this work could be interpreted as supporting the position that investors are not misled by firms' use of pro forma earnings. By examining subsequent cash flows and stock returns, we come to a very different conclusion. The market does not appear to appreciate the future cash flow implications of the excluded expenses; rather the market appears to be systematically fooled by firms' use of pro forma earnings.

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Notes

1. We use the IBES actual EPS as our definition of pro forma earnings. Besides the obvious power advantages that come from using the large IBES database rather than a small hand-collected sample, the studies using hand-collected samples have failed to document any significant difference between the pro forma earnings taken from the press release and the amount reported by IBES. We discuss this further in the next section.
2. See Bhattacharya et al. (2002) or Lougee and Marquardt (2002) for a detailed description of the different types of exclusions.
3. See Lipe (1986), Elliott and Shaw (1988), DeAngelo et al. (1992), Elliot and Hanna (1996), Fairfield et al. (1996), and Burgstahler et al. (2002).
4. See Dechow (1994), Finger (1994), Sloan (1996), Richardson et al. (2002), Dechow et al. (1998), Hribar (2000), Chan et al. (2001), Xie (2001), Liu and Thomas (2000), Fairfield et al. (2001), Barth et al. (2001), Thomas and Zhang (2001), and Liu et al. (2002).
5. As evidence of the close relation between the firm and its analysts, a recent survey the National Investor Relations Institute finds that 85% of companies offer earnings guidance to analysts (NIRI, 2001).
6. Baber and King (2002) and Payne and Thomas (2002) show that the IBES split adjustment, coupled with IBES' severe limit on the number of significant digits and subsequent rounding, can lead to erroneous inferences.

7. Since Compustat does not report quarterly operating income per share on a diluted basis, we adjust it to a diluted basis, if necessary, by using the most recent annual dilution factor, computed from basic shares outstanding (data item #54) and diluted shares outstanding (data item #171).
8. Other potential omitted-correlated variables are the firm characteristics that caused the firm to use a pro forma definition of earnings in the first place. However, as we show later, our results are just as strong within the subsample of firms that have nonzero total exclusions (i.e., they all have pro forma earnings different than GAAP earnings).
9. The Newey-West adjustment is discussed in Verbeek (2000, p. 104). The correction multiplies the traditional standard error by $\sqrt{NW}$, where $NW = 1 + \sum_{i=1}^{n} (1 - i/n + 1)\rho_i$. The variable ρ_i is the autocorrelation at lag i and n is the number of lags that are expected to be autocorrelated. We set n equal to the number of overlapping periods in each test (i.e., $n = 3$ for the one-year ahead tests, $n = 7$ for the two-year ahead tests and $n = 11$ for the three-year ahead tests).
10. Firms that were delisted due to poor performance (delisting codes 500 and 520–584) frequently have missing delisting returns. We correct for this bias, as recommended in Shumway (1997) and Shumway and Warther (1999), by using delisting returns of -35% for NYSE/AMEX firms and -55% for NASDAQ firms for these delisting codes.
11. While the actual hedge portfolio puts a small positive or negative weight on each stock in the sample, the intuition is best seen by noting that in equation (2) the estimated hedge return by going long on the top decile of total exclusions and short on the bottom decile of total exclusions is $\gamma_2(1) - \gamma_2(0) = \gamma_2$.
12. Abarbanell and Lehavy (2002) show that the distribution of total exclusions has an extreme positive tail, and suggest that this tail could drive the results of studies using IBES forecasts. This is not the case in our study, however. Replacing the cash flow variables with their decile ranks yields results that have similar statistical significance and the returns tests are already based on decile ranks.
13. Both papers use future cash from operations as the dependent variable, measured over various horizons. In Dechow et al. (1998) the independent variables are current cash flows and earnings, and the coefficient on earnings is large and positive while the coefficient on cash flows is typically small and positive. In Barth et al. (2001) the independent variables are current cash flows and accruals, and the coefficient on accruals is small and positive while the coefficient on cash flows is large and positive. By substituting earnings less accruals for cash flows in each regression it can be shown that the implied coefficient on accruals is negative in a regression of future cash flows on earnings and accruals.
14. In unreported tests we include the increase in accounts payable and accrued liabilities from the cash flow statement (data item # 105) as a more specific control for the current accrual and subsequent cash flows associated with a restructuring charge. Results on the variables of interest remain quantitatively and qualitatively similar. In addition, the coefficient on total exclusions remains large and significant without the control variables.
15. We also estimate the regressions in Table 3 using GAAP earnings over the next one, two or three years as the dependent variable instead of CFO. The coefficient estimates for Total Exclusions and Other Exclusions are similar in magnitude and significance to those reported in Table 3.
16. These results are consistent with Burgstahler et al. (2002) who find that a portfolio that takes a long position in firms with positive special items and a short position in firms with negative special items earns a small abnormal return around the future earnings announcement date in quarter $t+4$.
17. Hirshleifer and Teoh (2002) model how firms may choose to present information in a favorable light to investors with limited attention and information processing abilities. Our future return results are consistent with the predictions of their model. In addition, in unreported results we extend our future return windows to four and five years but find no significant additional abnormal returns beyond what is documented in the three-year return window.
18. Also weakening this test is the Gleason and Lee (2002) finding that a large portion of subsequent price corrections takes place around future analysts' forecast revisions dates, rather than quarterly earnings releases. In addition, this test necessarily induces a survivorship bias by requiring the firm to exist during the future announcement periods, and this bias will impact the highest decile of Total Exclusions disproportionately more than the lowest decile. Finally, Sloan (1996) also found that the returns to the accruals anomaly were concentrated in the future announcement periods for the firms with high expected returns but not for the firms with low expected returns.

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