An Empirical Investigation of Non-GAAP Exclusion Quality Indicators

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ABSTRACT

We examine commonly used indicators of non-GAAP exclusion quality and find they perform poorly at capturing low-quality (i.e., more persistent) exclusions. Further, low-quality non-GAAP earnings, as identified by any of the indicators used in prior research, are more value relevant than GAAP earnings. We propose a new indicator that performs better at identifying low-quality non-GAAP exclusions. Specifically, we consider cases where GAAP earnings are highly persistent (e.g., low-magnitude unexpected earnings; Freeman and Tse 1992), but managers report non-GAAP earnings anyway. In these cases, exclusions have strong negative persistence for future operating earnings/cash flows, suggesting exclusions are of low quality. Further, the GAAP ERC is significantly greater than the non-GAAP ERC. In total, our results suggest existing indicators of low-quality non-GAAP earnings are of little use and that researchers and regulators should focus on firms that disclose non-GAAP earnings despite high quality GAAP earnings.

1. INTRODUCTION

Much of prior research on non-GAAP reporting relies on one or more of the following indicators to identify low-quality non-GAAP exclusions: (1) meeting or beating the analyst consensus with non-GAAP earnings when GAAP earnings fall short (e.g., Baik, Billings, and Morton 2008; Doyle, Jennings, and Soliman 2013), (2) exceeding GAAP earnings through income-increasing exclusions (e.g., Bentley, Christensen, Gee, and Whipple 2018), and (3) turning GAAP earnings losses into non-GAAP profits, or "avoiding losses" (e.g., Bhattacharya, Black, Christensen, and Larson 2003; Brown, Christensen, Elliott, and Mergenthaler 2012).[1] The maintained assumption underlying all of these commonly used indicators is that exclusions that are both necessary and sufficient to achieve a strategic reporting benchmark are more likely driven by managers' opportunism than exclusions that are either unnecessary or insufficient to achieve that benchmark. However, there is little evidence regarding how well these indicators segregate exclusions into low- versus high-quality.[2] In this paper, we assess the construct validity of these non-GAAP exclusion quality indicators. We also propose a new indicator to better capture non-GAAP exclusion quality.

Non-GAAP reporting quality is a topic of interest to regulators and market participants. Scrutiny of non-GAAP measures has grown recently as their use has become more widespread. Regulators, practitioners, and news outlets frequently express concern about managers using non-GAAP measures to report opportunistic assessments of firm performance (Golden 2017; Rapoport

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[1] We use the term "exclusions" to refer to the earnings components managers exclude from GAAP earnings when disclosing non-GAAP earnings.

[2] One exception is recent evidence by Leung and Veenman (2019), who examine the incremental information in loss firms' non-GAAP earnings. While the focus of their study is not to evaluate indicators of non-GAAP reporting quality, Leung and Veenman find evidence suggesting that non-GAAP earnings are highly predictive of future performance for GAAP loss firms. Their result is consistent with the notion that, on average, firms that report non-GAAP profits in the presence of GAAP losses do so for informative reasons.

2016). The Sarbanes-Oxley Act of 2002 and subsequent SEC regulatory actions such as Regulation G were intended to constrain managers from opportunistic use of non-GAAP earnings. However, the SEC has recently expressed increased concerns that current requirements are 'not working', and that some non-GAAP disclosures may mislead investors.[3] This concern led to the percentage of SEC comment letters referencing non-GAAP measures increasing from roughly 9% in 2010 to 35% in 2017 (Audit Analytics).

We test the construct validity of the three indicators used in prior research by comparing the persistence of exclusions the indicators classify as low-quality to exclusions the indicators classify as high-quality. We measure persistence by the mapping of exclusions into future operating earnings and future operating cash flows (e.g., Kolev et al. 2008; Landsman, Miller, and Yeh 2007; Frankel et al. 2011; Bentley et al. 2018; Kyung et al. 2019). Exclusions the indicators classify as low-quality should have higher associations with future operating earnings or cash flows than exclusions the indicators classify as high-quality.[4] For example, if meeting or beating the analyst consensus with non-GAAP earnings when GAAP earnings fall short is a good indicator of low exclusion quality, then exclusions should have more persistence for future operating earnings and cash flows when the firm's non-GAAP earnings meet or beat the consensus forecast (but GAAP does not) than when both non-GAAP and GAAP earnings either miss or beat the forecast.

Our primary results suggest that the three indicators perform poorly at identifying low-quality exclusions. For meeting or beating the analyst consensus (MOB) and avoiding losses by

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[3] WSJ March 16, 2016 https://www.wsj.com/articles/sec-scrutinizing-use-of-non-gaap-measures-by-public-companies-1458139473. Last accessed May 2019.

[4] The basic notion behind exclusion persistence is as follows: If excluded earnings components are transitory in nature, do not reflect core operations, or are otherwise not useful when assessing firm performance, then the excluded items should have little to no relation with future operating earnings and/or cash flows (Doyle et al. 2003; Kolev et al. 2008; Whipple 2016; Bentley et al. 2018).

turning GAAP losses into non-GAAP earnings profits (AVOID), we find that exclusions that help meet/beat the analyst consensus (turn GAAP losses into non-GAAP profits) are not of lower quality than exclusions that do not help meet/beat the analyst consensus (turn GAAP losses into non-GAAP profits). In fact, our evidence suggests that these exclusions are of *higher* quality (i.e., are of lesser persistence). The result for the MOB indicator is surprising given this indicator is the most commonly used in prior research to identify low-quality exclusions. The result for the AVOID indicator complements the evidence in Leung and Veenman (2018) and suggests that, on average, non-GAAP earnings are more informative than GAAP earnings in the presence of GAAP losses. On the other hand, we find exclusions are of *lower* quality (i.e., have greater persistence) when non-GAAP earnings exceed GAAP earnings (EXCEED), suggesting this indicator appropriately identifies low-quality exclusions. However, one limitation of the EXCEED indicator is that it identifies nearly all exclusions as low quality. More specific to our sample, non-GAAP earnings is greater than GAAP earnings for 83% of the observations.

We next seek to improve the identification of low-quality non-GAAP earnings. Managers generally justify the disclosure of non-GAAP earnings by arguing that GAAP earnings contain items that are transitory, non-cash, and less relevant for assessing firm fundamentals (Black et al. 2018). In other words, managers claim they disclose non-GAAP earnings to compensate for low-quality GAAP earnings. The implication is that when GAAP earnings are of low quality, non-GAAP exclusions should be of higher quality. However, managers' motivation to provide non-GAAP earnings in the presence of high-quality GAAP earnings is unclear. We conjecture that non-GAAP exclusions are of lower quality in this scenario. While prior research considers several earnings characteristics that indicate quality, one common measure of quality in both the GAAP and non-GAAP literatures is persistence (Doyle et al. 2003, Kolev et al. 2008; Barth et al. 2012;

Bentley et al. 2018; Leung and Veenman 2019). Generally, earnings persistence cannot be measured for each firm-quarter because estimating persistence requires a time-series of earnings. However, evidence in Freeman and Tse (1992) suggests that the magnitude of GAAP earnings surprise is negatively correlated with GAAP earnings persistence.[5] Therefore, we use the magnitude of GAAP earnings surprise as a firm-quarter specific measure of GAAP earnings quality.

Specifically, we construct and validate a new indicator of low quality exclusions as equal to one for firms disclosing non-GAAP earnings when their absolute GAAP surprise (i.e., actual GAAP earnings minus the GAAP earnings analyst consensus forecast) is small, i.e., five, three, or one cent(s) per share or less. This new indicator identifies low-quality exclusions as occurring when GAAP earnings are highly persistent, but managers report non-GAAP earnings anyway. We assess our new indicator of exclusion quality through persistence tests similar to our tests of the extant low-quality indicators. We find that our new indicator identifies exclusions that are of lower quality, i.e., highly persistent for both future operating earnings and future operating cash flows.

Next, we compare the value relevance of low-quality non-GAAP earnings to the same firms' GAAP earnings. Prior research generally concludes that non-GAAP earnings are, on average, more informative or value relevant than GAAP earnings (e.g., Bhattacharya et al. 2003; Bradshaw and Sloan 2002). However, it is unclear from prior research whether low-quality non-GAAP earnings are more, less, or equally informative relative to GAAP earnings. We identify low-quality non-GAAP earnings using both the indicators used widely in prior research and our

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[5] The rationale behind this notion is that analysts and investors place greater emphasis on forecasting high-persistence components of earnings than low-persistence components because high-persistence components have greater valuation weight. Therefore, forecasts of high-persistence components of earnings will be more accurate than those of low-persistence components. This leads to a negative association between the persistence of earnings and the absolute magnitude of unexpected earnings.

new indicator. If non-GAAP exclusions are low-quality (i.e., they are persistent for future performance), then non-GAAP earnings is missing economically important components which would reduce its value relevance.

We find that low-quality non-GAAP earnings are significantly more value relevant than GAAP earnings (i.e., have larger ERCs and a greater correlation with quarterly buy-and-hold returns) when we identify low-quality exclusions using the indicators used in prior research. This evidence suggests that either (1) low-quality non-GAAP earnings are more useful to investors for valuation than their GAAP counterparts, or (2) the quality indicators used in prior research perform poorly at identifying low-quality non-GAAP earnings. The latter explanation is consistent with the evidence from our persistence analyses. When we utilize our new indicator to identify low-quality non-GAAP earnings, we find that low-quality non-GAAP earnings have the *same* or *lower* value relevance than GAAP earnings. This evidence is important given regulators' expressed concerns about lower-quality non-GAAP reporting potentially misleading investors.

We conduct several additional tests that complement our main results. First, our new quality indicator relies on the assumption that the absolute magnitude of GAAP surprises is positively associated with non-GAAP exclusion quality. We explore whether this association is monotonic by examining the exclusion quality of quarters with large GAAP surprises. We find that quarters in the top decile, tercile, and quintile of GAAP surprises have higher quality non-GAAP exclusions than quarters with smaller GAAP surprises, consistent with a monotonically negative relation between GAAP surprises and non-GAAP reporting quality. Second, another underlying assumption motivating our new indicator is that GAAP earnings are more persistent when GAAP surprises are small (Freeman and Tse 1992). We provide corroborating evidence consistent with this assumption using our more recent sample. Third, we investigate whether our

new indicator's ability to identify low-quality exclusions is driven by observations where non-GAAP earnings turn GAAP misses into non-GAAP meets/beats, which prior research argues is consistent with opportunistic behavior (e.g., Doyle et al. 2013). We find that our new indicator's ability to identify low-quality exclusions is driven by observations with positive *and* negative GAAP surprises, suggesting that our new indicator's ability to identify low-quality exclusions is not driven by benchmark beating. Fourth, we split exclusions into special and other items and repeat the persistence tests using our new indicator.[6] Consistent with prior research, our results suggest that the persistence of low-quality exclusions is driven by other items. Lastly, we discuss alternative ways to capture non-GAAP exclusion quality for observations with no analyst coverage and other sample limitations.

This paper makes two main contributions to the literature. First, we provide evidence suggesting that the most commonly used indicators of low-quality non-GAAP exclusions, on average, either do not distinguish low-quality exclusions from high-quality exclusions or place a large majority of exclusions into one low-quality basket. This is important given the bulk of prior studies that rely on the assumption that firms that meet and/or beat strategic benchmarks with non-GAAP earnings numbers do so opportunistically (e.g., Baik et al. 2008; Doyle et al. 2013; Bentley et al. 2018; Bhattacharya et al. 2003; Brown et al. 2012). Assessing the empirical methods utilized to measure non-GAAP reporting quality is also important given the increased regulatory concern about non-GAAP reporting misleading investors despite prior evidence indicating that non-GAAP earnings numbers are superior to their GAAP counterparts (Black et al. 2018).

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[6] Special item exclusions are typically one-time, transitory, or non-recurring items excluded from GAAP earnings. In contrast, managers sometimes remove recurring items from GAAP earnings, also referred to as "other exclusions", that are typically non-operating or non-cash. Excluding other items is generally considered to reflect aggressive non-GAAP reporting (Black et al. 2018).

Second, we introduce an easily implementable indicator of exclusion quality that identifies low-quality exclusions. Our new indicator not only produces improvements in terms of identifying exclusions that map into future operating earnings and cash flows, but also performs much better than the existing indicators at identifying less value-relevant non-GAAP earnings metrics. Because non-GAAP earnings are, on average, more informative than GAAP earnings, identifying abusive or low-quality non-GAAP reporting can be difficult. In fact, the quality indicators used in prior research identify non-GAAP earnings that are far superior to GAAP earnings in terms of value relevance. Our new indicator identifies low-quality non-GAAP earnings that are closer in value relevance to GAAP earnings, including non-GAAP earnings that are of *less* value relevance than GAAP earnings. Our new indicator can help researchers and regulators differentiate between higher and lower quality non-GAAP metrics.[7]

2. BACKGROUND AND PRIOR LITERATURE

2.1 Managers' motivation for providing non-GAAP EPS metrics

Extant studies suggest that managers have multiple motivations to report non-GAAP metrics. On one hand, there is evidence that some managers provide non-GAAP numbers to better inform investors. For example, substantial research documents that on average, non-GAAP EPS numbers are more value relevant (e.g., Bradshaw and Sloan, 2002; Bhattacharya et al., 2003) and more informative to investors than their GAAP counterpart (Brown and Sivakumar 2003; Johnson and Schwartz 2005; Marques 2006; Bradshaw et al. 2018). In addition, there is evidence that non-GAAP reporting improves the precision of earnings information, accelerates price discovery, and

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[7] There is one caveat we must offer in terms of interpreting our results: Although an alternative interpretation of our evidence that widely-used exclusion quality indicators do not capture differences in exclusion quality is that exclusion persistence does not provide a good assessment of exclusion quality. However, our value relevance evidence is more consistent with the interpretation that existing benchmark-indicators of exclusion quality perform poorly and less consistent with the interpretation that persistence for future earnings is a poor means of assessing exclusion quality.

reduces information asymmetry (e.g., Huang and Skantz 2016). This evidence is consistent with managers systematically excluding irrelevant items in calculating non-GAAP earnings to provide a superior metric of firm performance (e.g., Black et al. 2017; Entwistle et al. 2005; Kyung et al. 2016).

On the other hand, however, there is also evidence suggesting managers sometimes have opportunistic motives when providing non-GAAP earnings. Incentives for opportunism with non-GAAP earnings comes from incentives to meet or beat strategic targets (e.g., Black and Christensen 2009; Doyle et al. 2013), increasing investors' perceptions of core operating earnings (e.g., Curtis et al. 2014; Entwistle et al. 2005), and extracting personal gain (Black et al. 2018a). Relatedly, other studies also provide evidence that some non-GAAP exclusions are associated with future returns, consistent with non-GAAP earnings excluding items that are useful in valuation and thus potentially misleading to investors (e.g., Landsman et al. 2007; Doyle et al., 2003; Chen, 2010; and Zhang and Zheng 2011). Concern over some investors being misled by non-GAAP earnings has led to SEC regulatory actions such as Regulation G in 2003 and CD&I's about non-GAAP reporting both in 2010 and 2016.

2.2 Non-GAAP literature and benchmark-based indicators of quality

2.2.1 Motivation for managers to meet or beat specific earnings targets

Both the accounting and finance literatures indicate that managers are willing to manipulate GAAP earnings and engage in value-decreasing actions to meet and/or beat strategic benchmarks. For example, there is evidence that managers are willing to forgo positive NPV projects to meet/beat analyst forecasts (Graham, Harvey, and Rajgopal 2005). Managers have various incentives to meet specific targets including bonuses (e.g., Healy 1985; Fields et al. 2001; Matsunaga and Park 2001), career concerns (e.g., Farrell and Whidbee 2003), reputation with

stakeholders (e.g., Bowen et al. 1995; Burgstahler and Dichev 1997), loss avoidance to reduce cost of debt (e.g., Watts and Zimmerman 1990), and stock price performance (e.g., Bartov et al. 2002; Skinner and Sloan 2002). These incentives for managers to consistently meet and/or beat strategic benchmarks have motivated researchers to assume that meeting and/or beating targets with non-GAAP earnings when GAAP earnings fall short likely reflects managerial opportunism (e.g., Heflin and Hsu 2008; Frankel et al. 2011).

2.2.2 Meeting or beating the analyst consensus

The most commonly used indicator of non-GAAP reporting quality is meeting or beating the analyst consensus with non-GAAP earnings when GAAP earnings fall short (e.g., Bhattacharya et al. 2003; McVay 2006; Baik et al. 2008; Heflin and Hsu 2008; Black and Christensen 2009; Chen 2010; Jennings and Marques 2011; Black et al. 2015; Bentley et al. 2018;). The use of this indicator is motivated from studies suggesting that managers employ earnings management tools such as accrual manipulation, expectations management, and real activities manipulation (e.g., Abarbanell and Lehavy 2003; Matsumoto 2002; Rychowdhury 2006) to meet and beat analysts' consensus. These studies led researches to examine whether managers also use non-GAAP reporting to meet or beat analyst forecasts. For example, early non-GAAP studies suggest that failing to meet or beat analysts' consensus with GAAP earnings is a strong determinant for reporting non-GAAP earnings (e.g., Lougee and Marquardt 2004). Doyle et al. (2013) provide evidence suggesting that managers define non-GAAP earnings opportunistically to meet or beat analyst forecasts, especially when it is costlier for managers to use accrual earnings management.

2.2.3 Exceeding GAAP earnings through income-increasing exclusions

Relying on prior non-GAAP research arguing that aggressive non-GAAP reporting allows firms to meet strategic targets, Bentley et al. (2018) identify non-GAAP earnings exceeding GAAP

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earnings, or allowing the firm to report more positive earnings relative to GAAP, as a potential setting for aggressive reporting. They find that non-GAAP numbers are more likely to exceed GAAP earnings in quarters where managers report non-GAAP earnings (and analysts do not). Moreover, non-GAAP earnings are less likely to exceed GAAP earnings when analysts report non-GAAP earnings (and managers do not).

2.2.4 Avoiding losses by turning GAAP losses into non-GAAP profits

Another common indicator used in the non-GAAP literature is avoiding losses, or turning GAAP losses into non-GAAP profits (e.g., Bhattacharya et al. 2003; Black and Christensen 2009; Isidro and Marques 2015; Bentley et al. 2018; Christensen et al. 2020). Black and Christensen (2009) find that managers use recurring items such as research and development expenses to convert GAAP operating losses into non-GAAP profits. They conclude that the use of recurring items to turn GAAP losses into non-GAAP profits is consistent with opportunistic non-GAAP reporting. More recently, Leung and Veenman (2019) find that non-GAAP earnings disclosures are particularly informative for firms that report GAAP losses, including firms that convert GAAP losses into non-GAAP profits.

2.3 Non-GAAP reporting quality and exclusion persistence

Parallel to the research that uses benchmark beating as an indicator of exclusion quality is research that assesses the quality of exclusions using the persistence of exclusions for future operating earnings and/or cash flows.[8] The idea underlying analyses of the persistence of exclusions for future firm performance is that non-GAAP exclusions should have little to no association with future performance if these excluded items are transitory or otherwise do not

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[8] An exhaustive list is not practical here, but some prominent examples include Doyle et al. (2003), Kolev et al. (2008), Gu and Chen (2004), Barth, Gow, and Taylor (2012), Brown et al. (2012), Curtis et al. (2014), Heflin et al. (2015), Leung and Veenman (2018), and Bentley et al. (2018).

contain information. In other words, high-quality exclusions have low persistence for future firm performance and low-quality exclusions have high persistence for future firm performance. For example, Kolev et al. (2008) analyze the change in the persistence of non-GAAP exclusions to assess whether regulatory changes in the early to mid-2000s. They find that exclusions are more transitory, i.e., higher quality, following SEC intervention.

In summary, prior research uses various indicators of exclusion quality that center on using non-GAAP earnings to meet or beat certain benchmarks, primarily the consensus analyst forecast, current GAAP earnings, and zero earnings (avoid losses). Prior research also uses exclusion persistence to assess the quality of exclusions. However, no research to date (that we are aware of) uses exclusion persistence to assess the quality of the exclusions that the exclusions indicators indicate are low quality. We perform that assessment in this paper. Our objective is to shed light on how well the exclusion quality indicators segregate exclusions into low versus high quality. We note that a maintained assumption in our analyses is that exclusion persistence for future firm performance is a good measure of exclusion quality.

3. METHODOLOGY

3.1 New measure of non-GAAP quality

We propose a new measure of non-GAAP quality based on the assumption that non-GAAP exclusions are low quality when GAAP earnings is highly persistent. Non-GAAP reporters generally start with GAAP earnings and exclude earnings components that they argue are transitory, non-cash, and less relevant for assessing firm fundamentals (Black et al. 2018). This logic suggests that in cases where GAAP earnings are of high persistence, but managers disclose non-GAAP earnings anyway, exclusions should be of lower quality (i.e., more persistent) relative to cases where GAAP earnings are of lower persistence. We rely on prior research suggesting that

the absolute value of unexpected GAAP earnings is negatively correlated with GAAP earnings persistence to identify quarters with highly persistent GAAP earnings (e.g., Freeman and Tse 1992). The premise underlying this measure is that analysts and investors place greater emphasis on forecasting high-persistence components of earnings than low-persistence components because high-persistence components have greater valuation weight. Therefore, forecasts of high-persistence components of earnings will be more accurate than those of low-persistence components. This results in a negative association between the persistence of GAAP earnings and the absolute magnitude of unexpected GAAP earnings.

Specifically, we define an indicator equal to one for firm-quarters in which non-GAAP earnings are disclosed and the absolute value of the GAAP surprise (i.e., actual GAAP earnings minus the GAAP earnings analyst consensus forecast, or unexpected earnings) is five cents or less per share. Thus, the variable *GAAP Surprise < 5 cents* indicates GAAP earnings is within five cents per share of the analyst GAAP earnings consensus. To ensure our results are not sensitive to the five-cent earnings surprise threshold, we also construct the variables *GAAP Surprise < 3 cents* and *GAAP Surprise < 1 cent*, indicating GAAP earnings is within three cents and one cent per share, respectively, of the analyst GAAP earnings consensus. We next describe our method for assessing the ability of our indicator, in addition to other indicators used in prior literature, to capture non-GAAP exclusion quality.

3.2 Exclusion persistence

As mentioned in Section 2, a common way to assess the quality of non-GAAP earnings is to examine exclusion persistence by estimating the association between non-GAAP exclusions and future firm performance. Non-GAAP exclusions should have weak or no association with future performance if they are not persistent (i.e., do not reflect firms' core operations) (Doyle et al. 2003;

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Kolev et al. 2008). We rely on this methodology as our first test of whether commonly used benchmark indicators, as well as our new indicator, capture non-GAAP reporting quality. Specifically, we compare the exclusion persistence for firm-quarters in which the indicators identify low-quality exclusions to those that are not identified as low-quality by estimating the following OLS regression:

$$
\begin{aligned}
Future\_Performance_{i,q} = \ & \alpha_0 + \alpha_1 NG_{i,q} + \alpha_2 Exclusions_{i,q} + \alpha_3 QualityIndicator_{i,q} \\
& + \alpha_4\big(NG_{i,q} \times QualityIndicator_{i,q}\big) \\
& + \alpha_5\big(Exclusions_{i,q} \times QualityIndicator_{i,q}\big) \\
& + Controls + Industry\ FE + Quarter\ FE + \varepsilon
\end{aligned}
\tag{1}
$$

where subscripts i and q represent firm and quarter, respectively. *Future_Performance* is the sum of either future operating earnings or future operating cash flows over the four subsequent quarters, *q+1* through *q+4,* for firm *i*. *NG* is the observable non-GAAP earnings metric provided in earnings press releases by managers scaled by total assets. *Exclusions* is the difference between non-GAAP earnings and GAAP earnings, scaled by total assets. *QualityIndicator* is an indicator equal to one if a firm reports low-quality non-GAAP as identified by measures either used by prior research or developed in this study, and zero otherwise. We focus on three common earnings benchmarks from prior studies wherein the firm meets or beats a given earnings benchmark with non-GAAP earnings when GAAP earnings falls short of the same respective benchmark. Specifically, we indicator variables equal to one for firm-quarters that: (1) meet or beat the analyst consensus with non-GAAP earnings when GAAP earnings fall short (*Meet/Beat Consensus*), (2) exceed GAAP earnings through income-increasing exclusions (*Exceed GAAP*), and (3) turn GAAP earnings losses into non-GAAP profits (*Avoid Loss*).

The coefficient of interest in Equation (1) is α_5, which can be interpreted as the incremental exclusion persistence for firm-quarters identified by the respective quality indicator relative to all other non-GAAP reporters A negative and significant coefficient would suggest that non-GAAP

exclusions are more persistent (and therefore of lower quality) for firm-quarters identified as low quality by extant and our new indicators, as compared that those that are not identified as low quality. Relying on prior research (e.g., Bentley et al. 2018), we define *Controls* as a set of control variables that effect both non-GAAP reporting and future performance. These control variables include: log of firm size (*Size*), book-to-market ratio (*BTM*), sales growth (*Growth*), earnings volatility (*Volatility*), and *Loss*, which is an indicator variable equal to zero for firm quarters reporting GAAP earnings losses, and zero otherwise. We also include industry and year-quarter fixed effects and cluster standard errors by firm and quarter to address serial and cross-sectional correlation (Petersen 2009).

3.3 Earnings response coefficient and value relevance

Prior studies find that non-GAAP earnings is more informative and value relevant to investors than GAAP earnings (Bradshaw and Sloan 2002; Bradshaw et al. 2018). However, these studies do not examine how informative *low quality* non-GAAP earnings are relative to GAAP earnings. If a quality indicator successfully identifies low-quality non-GAAP numbers, then the extent to which non-GAAP earnings is more informative than GAAP earnings should be reduced for observations identified by the indicator. Thus, we compare the value relevance of GAAP earnings versus low-quality non-GAAP earnings as identified by both the indicators from prior research and our new indicator. We follow prior literature and compare the earnings response coefficient (ERC) of GAAP earnings to that of non-GAAP earnings, as well as the correlation with quarterly buy-and-hold returns of GAAP earnings to that of non-GAAP earnings:

$$Return_{i,q} = \alpha_0 + \alpha_1 NG\_Surprise_{i,q} + \varepsilon \qquad (2)$$

$$Return_{i,q} = \alpha_0 + \alpha_1 GAAP\_Surprise_{i,q} + \varepsilon \qquad (3)$$

where subscripts i and q represent firm and quarter, respectively. *Return* represents two different variables: (1) $Return_{EA}$, defined as the three-day cumulative market-adjusted returns for firm i over the window from one trading day before to one trading day after the earnings announcement for quarter q; or (2) $Return_{Qtr}$, defined as the buy-and-hold return of firm i calculated from two days following the previous earnings announcement through one day following the current earnings announcement. *NG_Surprise* and *GAAP_Surprise* are unexpected earnings surprises on a non-GAAP and GAAP basis, respectively (i.e., [non-GAAP EPS minus the analyst consensus non-GAAP EPS forecast] and [GAAP EPS minus the analyst consensus GAAP EPS forecast], respectively). We scale earnings by market value of equity near the beginning of the return window for the ERC and value-relevance specifications (Collins and Kothari 1989). Specifically, we scale earning variables by market value of equity at the end of fiscal quarter q in the ERC specification and at the beginning of fiscal quarter q in the value-relevance specification. We cluster standard errors by quarter to address cross-sectional error correlation.

We estimate Equations (2) and (3) for each of the indicators. We anticipate both non-GAAP and GAAP ERCs (i.e., $α_1$) to be significantly positive in both the ERC ($Return_{EA}$) and value relevance ($Return_{Qtr}$) analyses. We follow prior studies (e.g., Bhattacharya et al. 2003; Brown and Christensen 2014) and test the relative informativeness of non-GAAP and GAAP earnings for the subsamples of firms identified by each quality indicator based on coefficient and R^2 differences. Specifically, we test whether the non-GAAP ERCs ($α_1$ from Equation [1]) are significantly greater than GAAP ERCs ($α_1$ from Equation [2]) for each subsample of firms identified by the various quality indicators. We also test the statistical significance of R^2 differences from estimates of Equation (1) and Equation (2) using Vuong's (1989) Z-statistic. We

interpret the earnings measure with the larger ERC and R^2 to be relatively more informative in the respective subsample.

4. RESULTS

4.1 Sample and descriptive statistics

Table 1 summarizes our sample attrition. We begin with a sample of firm-quarter observations from the Compustat-CRSP-IBES universe with fiscal quarters ending from January 2003 through April 2016. Our sample begins in 2003 and ends in 2016 because this is the period covered by the Bentley et al. (2018) manager non-GAAP dataset. We remove utilities and financial firms and firm-quarters with stock price below $5. Next, we remove firm-quarters where managers do not report non-GAAP EPS in the earnings press release, which we identify using the manager non-GAAP dataset provided by Bentley et al. (2018). Finally, we remove firm-quarters missing requisite data for constructing variables in our persistence tests, including future operating earnings, future operating cash flow, and control variables. The final persistence sample consists of 30,524 quarterly earnings announcements that contain non-GAAP earnings from 2003 to 2016. When we remove firm-quarters with missing data necessary for the variables in our value relevance and ERC tests, the sample consists of 26,707 firm-quarter observations from 2003 to 2016. We obtain price and return data from CRSP, other firm-specific characteristics from Compustat, and analyst forecast data from IBES.

Table 2 provides descriptive statistics for our sample of 30,524 firm-quarter observations. The extant indicators of low quality non-GAAP exclusions—*Meet/Beat Consensus*, *Exceed GAAP*, and *Avoid Loss*— identify 28%, 83%, and 13% of the full sample as low quality, respectively. Consistent with prior research (Bentley et al. 2018), for the large majority of our sample, non-GAAP exclusions allow firms to report street earnings that are higher than GAAP

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earnings (i.e., *Exceed GAAP* equals one for 83% of firm-quarters). Turning to our new quality indicators, we find 34% (28%; 14%) of GAAP surprises are less than five (three; one) cents per share, as denoted by *GAAP Surprise < 5 cents* (*GAAP Surprise < 3 cents; GAAP Surprise < 1 cent*). All continuous variables are winsorized at the 1st and 99th percentiles, and we exclude observations with an absolute value of studentized residuals greater than three in each of our empirical analyses to address influential observations (Leone et al. 2019).[9]

4.2 Exclusion persistence results

We first examine the ability of the extant indicators of low quality non-GAAP exclusions—*Meet/Beat Consensus*, *Exceed GAAP*, *Avoid Loss*—to identify low quality exclusions by comparing the exclusion persistence for firms identified by these indicators as low quality relative to all other non-GAAP reporters. As described in Section 3, we estimate future performance regressions and assess the significance of the interaction between total non-GAAP exclusions (*Exclusions*) and each low quality exclusion indicator separately. Here, a negative (positive) and significant coefficient on the exclusion interaction term *Exclusions×QualityIndicator* in Equation 1 suggests that non-GAAP exclusions are more (less) persistent, and thus of lower (higher) quality, for firms identified by the extant indicators. Said differently, if the low quality indicators successfully identify low quality exclusions, we should observe a negative and significant coefficient on the exclusion interaction term.

Table 3 provides the results of estimating Equation (1) for the three extant low quality indicators. Panel A reports estimates using *Future Operating Earnings* as the dependent variable, while Panel B reports estimates using *Future Operating Cash Flows* as the dependent variable.

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[9] Results are qualitatively similar when (1) excluding observations with absolute value of studentized residuals greater than two, or (2) applying no studentized residual filter. It is important to note that excluding observations using studentized residuals alters the number of observations in each regression differently.

The coefficient of interest is *Exclusions×QualityIndicator* for both panels. In column (1) of Panel A, we find that the persistence of non-GAAP exclusions that allow firms to *Meet/Beat Consensus* analyst forecasts is significantly lower (p-value <0.05) than the persistence of non-GAAP exclusions that do not allow firms to meet or beat analyst forecasts. Interestingly, this suggests *Meet/Beat Consensus* exclusions are actually of higher quality than exclusions that do not allow firms to meet or beat the consensus. Second, we find in column (2) that non-GAAP exclusions that *Exceed GAAP* earnings are significantly more persistent than non-GAAP exclusions of firms that do not exceed GAAP earnings (p-value <0.01). This result is consistent with Leung and Veenman (2019) who document that non-GAAP earnings in loss firms are significantly more informative than GAAP earnings, including firms that convert GAAP losses into non-GAAP profits. Third, we find in column (3) that non-GAAP exclusions of firms who *Avoid Loss* by turning GAAP losses into non-GAAP profits are actually of less persistence (i.e., of higher quality) than non-GAAP exclusions of firms who do not turn GAAP losses into non-GAAP profits (p-value <0.01). The results are similar in Panel B where *Operating Cash Flows* is the dependent variable, and where the exclusion interaction terms related to *Meet/Beat Consensus* and *Avoid Loss* remain statistically significant.

The evidence in Table 3 casts doubt on the usefulness of some of the extant exclusion quality indicators. Specifically, our evidence suggests that *Meet/Beat Consensus,* a commonly used quality indicator in prior research, as well as *Avoid Loss* identify high quality non-GAAP exclusions. Conversely, our results suggest a less commonly used quality indicator, *Exceed GAAP,* more successfully identifies low quality non-GAAP exclusions. However, *Exceed GAAP* classifies 83% of firm-quarter observations in our sample as low quality. Thus, while identifying firm-quarters in which non-GAAP earnings exceeds GAAP earnings seems to appropriately capture

relatively lower quality non-GAAP exclusions, this approach also classifies the exclusions of quite a large percentage of non-GAAP reporting firms as low quality.

We next test our measure of non-GAAP equality based on the notion that when GAAP earnings are highly persistent, non-GAAP earnings exclusions are of lower quality (i.e., more persistent).[10] As discussed in section 3, we identify firms with highly persistent GAAP earnings and consequently low quality exclusions as firms with small GAAP surprises. We identify small GAAP earnings surprises as those firm-quarters in which actual GAAP earnings is within five, three, or one, cent(s) or less per share of the GAAP analyst consensus forecast.

Table 4 repeats the analyses in Table 3 with our new *GAAP Surprise* indicators. Panel A reports estimates using *Future Operating Earnings* as the dependent variable, while Panel B reports estimates using *Future Operating Cash Flows* as the dependent variable. Again, the coefficient of interest is *Exclusions×QualityIndicator* for both panels. In column (1) of Panel A, we find that the persistence of non-GAAP exclusions for firm-quarters in which the GAAP surprise is less than five cents per share (*GAAP Surprise < 5 cents*) are significantly more persistent (*p*-value < 0.01) than non-GAAP exclusions for firm-quarters in which the GAAP surprise is greater than five cents per share. We find the same pattern when examining three-cent and one-cent GAAP surprises in columns (2) and (3), respectively. Coefficients reported in Panel B are smaller in magnitude but still significantly negative for all three of the new *GAAP Surprise* indicators. Overall, our evidence suggests the new *GAAP Surprise* indicators effectively identify more persistent, and therefore lower quality, non-GAAP exclusions.

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[10] Higher quality non-GAAP exclusions should have no association with future performance since these excluded items do not reflect firms' core operations (Doyle et al. 2003; Kolev et al. 2008).

4.3 Informativeness of GAAP vs. low-quality non-GAAP earnings

In this section, we test whether significant differences exist in the usefulness of GAAP and low quality non-GAAP earnings based on ERC and value-relevance analyses described in Section 3.3. We achieve this by separately estimating non-GAAP and GAAP ERCs for each subsample of firms identified as low quality by the various quality indicators. We then compare the informativeness of non-GAAP and GAAP earnings within each subsample by testing for differences in (i) the magnitude of GAAP vs. non-GAAP coefficient estimates and (i) R^2 for the non-GAAP vs. GAAP models. We repeat this process for each of the extant and new exclusion quality indictors. We examine ERCs and value relevance using two separate dependent variables in the respective analyses: (1) three-day cumulative returns surrounding the earnings announcement ($Return_{EA}$) for the ERC tests and (2) quarterly buy-and-hold returns from the previous to the current earnings announcement ($Return_{Qtr}$) for the value relevance tests. If a quality indicators effectively captures low quality non-GAAP, then the extent to which non-GAAP earnings is more informative than GAAP earnings should be lower in the subsample identified by the quality indicator than the full sample.

4.3.1 Earnings response coefficient (ERC) results

Table 5 presents the results of the ERC model estimations using $Return_{EA}$ as the dependent variable. Before comparing non-GAAP and GAAP ERCs within subsamples identified by the various quality indicators, we first compare the ERCs of non-GAAP vs. GAAP earnings for our full sample. Columns (1) and (2) of Table 5 display the ERC results using our full sample. Here, we find evidence that non-GAAP earnings are more informative to investors than GAAP earnings as evidenced by significant differences in R^2 for the non-GAAP and GAAP model estimations and significant differences in the ERCs on non-GAAP and GAAP earnings. Our full sample evidence

is consistent with prior research that comes to the same conclusion (e.g., Bradshaw and Sloan 2002; Bhattacharya et al. 2003; Bradshaw et al. 2018).

We next conduct a separate test for each exclusion quality indicator. Columns (3) through (8) shows the results using the three existing indicators used by prior research, while columns (9) through (14) shows the results using our new measures that identify low quality non-GAAP exclusions based on small GAAP surprises. Using the extant exclusion quality indicators, we find that non-GAAP ERCs are significantly greater than GAAP ERCs for each subsample. In fact, the non-GAAP vs. GAAP coefficient differences in columns (3) through (8) are similar in magnitude when using the full sample (shown in columns [1] and [2]). In addition, the R^2 are significantly greater in the non-GAAP specification for each subsample identified by the extant quality indicators. Overall, the evidence in columns (3) through (8) suggests low-quality non-GAAP earnings are significantly more informative than GAAP earnings for each subsample identified by the extant quality indicators. This evidence is consistent with our results in Table 3 suggesting that the exclusion quality indicators used in prior research do not seem to appropriately capture low-quality non-GAAP reporting.

In contrast, with the exception of columns (13) and (14), the ERC for GAAP earnings is larger than the ERC for non-GAAP earnings in columns (9) through (14), suggesting that low-quality non-GAAP earnings identified by our new indicator is less informative than GAAP earnings. In addition, GAAP earnings yield a significantly higher R^2 than non-GAAP earnings for columns (9) through (12), and an insignificant difference in R^2 between columns (13) and (14). These results complement the results in Lougee and Marquardt (2003), who find that for quarters with high GAAP earnings ERCs, GAAP earnings has greater relative value relevance than non-GAAP earnings, suggesting that the information content of non-GAAP earnings varies systematically

with GAAP earnings informativeness. Overall, the results in Table 5 are consistent with our new indicator more effectively identifying low-quality non-GAAP earnings than commonly used indicators in prior studies.

4.3.2 Value relevance results

We next conduct a series of tests similar to those of the previous section, this time focusing on the value relevance of non-GAAP versus GAAP earnings. We conduct the same analyses as in the ERC analysis, but replace the $Return_{EA}$ dependent variable with $Return_{Qtr}$. Once again, we first compare the value relevance of non-GAAP vs. GAAP earnings for our full sample in columns (1) and (2) of Table 6. We find significant differences in R^2 and the coefficients on non-GAAP and GAAP earnings, suggesting that non-GAAP earnings are more value relevant than GAAP earnings on average. Again, the full sample evidence supports the conclusions of prior research examining the value relevance of non-GAAP and GAAP earnings (e.g., Black et al. 2017; Entwistle et al. 2005).

We next conduct our value relevance analyses using the existing exclusion quality indicators from prior research in columns (3) through (8) of Table 6. We find that using both the coefficient difference and Vuong tests, non-GAAP earnings are more value relevant than GAAP earnings (except the R^2 difference for *Meet/Beat Consensus*, which is insignificant). Thus, using the existing indicators to identify low-quality non-GAAP earnings does not reduce the difference in value relevance between non-GAAP and GAAP earnings. In other words, the value-relevance of non-GAAP earnings still significantly exceeds GAAP for these firms. Columns (9) through (14) repeat the same tests using our new indicator to identify low-quality non-GAAP earnings. We find that GAAP earnings has a statistically greater coefficient than non-GAAP earnings in two out of the three variants of our new indicator, specifically when the GAAP surprise is less than five cents

and three cents per share. The results for the differences in R^2 are mixed in columns (9) through (14), with the R^2 larger for non-GAAP earnings in columns (9) and (10), and (13) and (14), and insignificant in columns (11) and (12).

In summary, the results in Tables 5 and 6 suggest that low-quality non-GAAP earnings are significantly more informative to investors than GAAP earnings for observations identified by the extant quality indicators. In contrast, using our new indicator to identify samples of low-quality non-GAAP exclusions, we find consistent evidence that GAAP earnings are significantly more informative to investors than non-GAAP earnings. Overall, our ERC and return analyses validates our new measures of quality and cast doubt on the usefulness of the extant indicators used in prior literature. In addition, this evidence validates recent SEC concerns that some non-GAAP numbers may mislead investors.

5. ADDITIONAL TESTS

In this section, we conduct additional analyses to provide further insight into our new measure of non-GAAP exclusion quality. Specifically, we: (1) conduct additional tests of the link between GAAP surprise magnitude, exclusion quality, and GAAP persistence, (2) rule out alternative explanations for the efficacy of our new measure, (3) investigate the generalizability of our measure in other settings, and (4) examine an alternative indicator of non-GAAP quality implied by recent research – quarters where managers provide non-GAAP earnings while analysts do not (Bentley et al. 2018).

5.1 Additional tests of the GAAP quality explanation

In developing our new measure of non-GAAP exclusion quality, we rely on prior research suggesting that smaller magnitudes of unexpected earnings (i.e., more accurate earnings forecasts) are associated with higher earnings persistence (Freeman and Tse 1992). Accordingly, our

proposed quality indicator relies on two assumptions: the absolute value of the magnitude of GAAP surprises is (1) positively associated with non-GAAP exclusions quality, and (2) negatively associated with GAAP earnings persistence. In the following two sections we empirically test each of the assumptions.

5.1.1 Large GAAP surprises and non-GAAP exclusion quality

In contrast to our indicator relying on small GAAP surprises to capture low quality non-GAAP exclusions, we examine whether large GAAP surprises capture high quality non-GAAP exclusions to test whether this relation is monotonic. To do so, we re-estimate our exclusion persistence model (Equation [1]), replacing our small GAAP surprise indicators with large surprise indicators. Our three large surprise indicators include: (1) *|GAAP Surprise| Top Tercile*, (2) *|GAAP Surprise| Top Quintile*, and (3) *|GAAP Surprise| Top Decile*. Each indicator equals one if the magnitude of the firms GAAP surprise in a particular quarter is in the top tercile, quintile, or decile of GAAP surprise magnitude, respectively.

Table 7 displays the results of this analysis. We find large GAAP surprises are associated with higher exclusion quality. In particular, the coefficient on the *Exclusions×QualityIndicator* interaction is significantly positive (*p*-value < 0.01) regardless of whether we measure future performance as future operating earnings (Panel A) or future operating cash flows (Panel B) and irrespective of the tercile, quintile, or decile indicator for large GAAP surprises. These results are consistent with a monotonically positive relation between GAAP surprises and non-GAAP reporting quality.

We also graphically depict this relation in Figure 1. We rank GAAP surprises by quarter to in deciles, and then estimate the following model by GAAP surprise decile:

$$Future\_Performance_{i,q} = \alpha_0 + \alpha_1 NG_{i,q} + \alpha_2 Exclusions_{i,q} \qquad (5)$$
$$+Controls + Industry\ FE + Quarter\ FE + \varepsilon$$

Finally, we plot the non-GAAP and exclusion coefficients by decile and display the results in Figure 1A (future operating earnings) and Figure 1B (future operating cash flows). We find that while the non-GAAP coefficient remains fairly stable across each decile, the exclusion coefficient decreases nearly monotonically with GAAP surprise decile. Notably, exclusion have similar persistence to non-GAAP earnings for firms in the lowest decile and exclusions have persistence near zero for firms in the highest decile. Overall, Figure 1 reinforces the results of earlier analyses that small (large) GAAP earnings surprises are associated with lower (higher) non-GAAP exclusion quality.

5.1.2 New exclusion quality indicator and GAAP persistence

Another underlying assumption motivating our new indicator is that GAAP earnings are more persistent when GAAP surprises are small (Freeman and Tse 1992). To examine the persistence of GAAP earnings when the GAAP surprise is small, we estimate the following model:

$$
\begin{aligned}
Future\_Performance_{i,q} = \alpha_0 &+ \alpha_1 GAAP_{i,q} + \alpha_2 QualityIndicator_{i,q} \\
&+ \alpha_3 \big(GAAP_{i,q} \times QualityIndicator_{i,q}\big) \\
&+ Controls + Industry\ FE + Quarter\ FE + \varepsilon
\end{aligned}
\tag{6}
$$

GAAP is GAAP earnings scaled by assets. *QualityIndicator* is one of our three new measures of non-GAAP exclusion quality—*GAAP Surprise < 5 cents* (*3 cents*, or *1 cent*). Here, we anticipate α_3 to be significantly positive, supporting the idea that our measures of exclusion quality (small GAAP surprises) capture highly persistent GAAP earnings. We tabulate the results from estimating Equation 4 in Table 8. The coefficient on the *GAAP×QualityIndicator* interaction is significantly positive (p-value < 0.01) across all columns, and when the future performance metric is either future operating earnings (Panel A) or future operating cash flows (Panel B). Thus, using our sample observations, we provide more recent evidence consistent with Freeman and Tse's

(1992) conclusion that small GAAP earnings surprises are associated with greater GAAP earnings persistence.

5.2 Benchmark beating incentives

As mentioned in Section 2.1, managers have various incentives to meet specific targets including bonuses (e.g., Healy 1985; Fields et al. 2001; Matsunaga and Park 2001), career concerns (e.g., Farrell and Whidbee 2003), reputation with stakeholders (e.g., Bowen et al. 1995; Burgstahler and Dichev 1997), loss avoidance to reduce cost of debt (e.g., Watts and Zimmerman 1990), and stock price performance (e.g., Bartov et al. 2002; Skinner and Sloan 2002). In this section, we explore the possibility that the efficacy of our new indicator at capturing low non-GAAP exclusion quality may be attributed to benchmark meeting or beating incentives, specifically analyst forecasts.

To test this possibility, we split our new indicator into instances when GAAP earnings just misses ("Just Miss") and just beats ("Just Beat") the GAAP consensus forecast while non-GAAP earnings meet or beat the non-GAAP consensus forecast. We then re-estimate our exclusion persistence model (Equation [1]) for both the "Just Miss" and Just Beat" subsamples. If the efficacy of our new indicator at capturing low non-GAAP exclusion quality is attributable to meeting or beating the analyst consensus, then the instances when GAAP earnings just misses the consensus should drive our results. We tabulate the results of this test in Table 9 where the dependent variable is future operating earnings (cash flows) for Panel A (B). Contrary to the potential alternate explanation that managerial incentives to beat the analyst consensus forecast may drive our measure's effectiveness, we do not find that low exclusion quality arises only when GAAP just misses the analyst consensus forecast. In fact, both panels suggest that when GAAP earnings are near the consensus forecast (either just above or just below, as captured by our "small GAAP

surprise" indicators), non-GAAP exclusion quality is low. Overall, this evidence is consistent with GAAP persistence explaining the variation in exclusion quality and inconsistent with managers' benchmark beating incentives explaining variation in exclusion quality.

5.3 Special item exclusions

We also investigate whether special item or other item exclusions drive the low-quality exclusions identified by our indicator. We re-estimate each model from Table 4 separating the *Exclusions* variable into special item exclusions (*SpecialItems*) and other item exclusions (*OtherItems*) and present the results in Table 10, where future operating earnings (cash flows) is the dependent variable for Panel A (B). In columns (1) through (3), we find that both special items and other item exclusions are incrementally more persistent for firms identified by our mew exclusion quality indicator. Further, the incremental coefficients for other item exclusions are significantly larger for each GAAP surprise indicator, suggesting managers' low-quality non-GAAP reporting is more strongly driven by recurring item exclusions. Results using future operating cash flows as the dependent variable are weaker (columns [4] through [6]), but still significantly negative for all other item exclusions. In summary, these results suggest our new indicator captures both low-quality special item and other item exclusions.

We also examine whether identifying firms-quarters with smaller magnitudes of special items using Compustat data is an efficient method to capture non-GAAP exclusion quality. We create a graphical depiction of exclusion quality based on the magnitude of special item exclusions. First, we rank firms with non-zero special items into deciles by special items (*SpecialItems)* by quarter. We then re-estimate the exclusion and non-GAAP earnings persistence coefficients using Equation (5) separately for firms with zero special items and by special items decile for firms with non-zero special items. Finally, we plot non-GAAP and exclusion persistence coefficients by

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group. We display the results in Figure 2A (future operating earnings) and Figure 2B (future operating cash flows). Unlike Figure 1, which clearly illustrates the ability of GAAP surprises to capture exclusion quality, Figure 2 does not display any discernable pattern between special item decile and the exclusion persistence coefficient. In general, it does not appear that identifying firm-quarters with smaller magnitudes of special items is an efficient way to capture non-GAAP exclusion quality.

5.4 Applying the new indicator to other samples

We apply our new indicator to a broader sample using IBES numbers as a proxy for managers' non-GAAP earnings. While we rely on manager-reported non-GAAP earnings provided by Bentley et al. (2018), other studies have relied on IBES numbers to proxy for managers' non-GAAP earnings (e.g., Heflin and Hsu 2008; Doyle et al. 2013). The Bentley et al. (2018) dataset is limited in time and firms covered such that it does not capture the full universe of manager non-GAAP earnings. To ensure our results generalize to samples beyond the Bentley et al. (2018) dataset, we re-estimate our exclusion persistence tests (Equation [1]) shown in Table 4 replacing manager non-GAAP earnings (*NG*) and exclusions (*Exclusions*) with I/B/E/S-reported non-GAAP earnings (*IBES NG*) and exclusions (*IBES Excl*). We provide the results of this estimation in Panel A of Table 11. The sample size increases substantially to approximately 75,000 observations. Overall, we continue to find that our GAAP surprise measures appropriately capture low quality non-GAAP exclusions in similar magnitudes to Table 4 when using *IBES NG, IBES Excl,* and the broader I/B/E/S sample.

We construct our new indicator using the difference between actual GAAP earnings and an important strategic benchmark, the analyst consensus forecast of GAAP earnings. However, not all firms are covered by analysts so it is not possible to calculate GAAP surprise using the

consensus for these firms. To ensure that our results generalize to firms with no analyst coverage, we estimate GAAP surprises using two alternative earnings expectation models: (1) random walk and (2) seasonal random walk. To test this proposition, we generate two indicator variables: (1) *Random Walk < 5 cents*, which equals one if the absolute value of the GAAP earnings surprise based on a random walk (i.e., actual GAAP less prior quarter GAAP) is less than or equal to five cents per share and (2) *Seasonal Random Walk < 5 cents*, which equals one if the absolute value of the GAAP earnings surprise based on a seasonal random walk (i.e., actual GAAP less prior year GAAP) is less than or equal to five cents per share. We re-estimate our exclusion persistence tests (Equation [1]) using our new indicator as the *QualityIndicator* and display our results in Panel B of Table 11. We find that the alternative small GAAP surprise measures based on random and seasonal random walk also identify low quality non-GAAP exclusions. Coefficients are generally similar in magnitude to those reported using the analyst consensus expectation model. Thus, our small GAAP surprise indicator is generalizable to settings in which analyst coverage does not exist.

5.5 *Manager-only indicator*

Bentley et al. (2018) compare manager-provided versus analyst-provided non-GAAP earnings and find that when managers provide non-GAAP earnings but analysts do not, non-GAAP exclusions have relatively more persistence for future performance. Specifically, they document that when managers provide non-GAAP earnings (and analysts do not), exclusions are of lower quality than in situations where both managers and analysts provide the same non-GAAP earnings number. This implies that identifying quarters where only managers report non-GAAP could be an alternative measure of non-GAAP quality. In our final analyses, we generate an indicator for firm-quarters in which managers report non-GAAP EPS but our analyst forecast data provider

(IBES) does not (*Manager Only*). We then repeat our persistence and value relevance analyses with this indicator to test its ability to identify low quality non-GAAP.

Table 12 provides the results of this test. Panel A displays the persistence results, and Panel B displays the ERC and value relevance results. We find that, using both *Future Operating Earnings* and *Future Operating Cash Flows*, the non-GAAP exclusions in the *Manager Only* scenario are significantly more persistent than non-GAAP exclusions of firms that are not in the *Manager Only* scenario (p-value < 0.01). However, in Panel B, we find that the ERCs and value relevance of non-GAAP earnings is higher than that of GAAP earnings for the manager only subsample. Overall, we find some evidence that *Manager Only* identifies lower quality non-GAAP exclusions consistent with Bentley et al. (2018), but it seems to be less effective than our new indicator relying on GAAP surprises in terms of value relevance.

6. CONCLUSION

We assess the validity of commonly used benchmark-based indicators of managers' non-GAAP exclusion quality. These include (1) meeting or beating the analyst consensus with non-GAAP earnings when GAAP earnings fall short (e.g., Baik, Billings, and Morton 2008; Doyle, Jennings, and Soliman 2013), (2) exceeding GAAP earnings through income-increasing exclusions (e.g., Bentley, Christensen, Gee, and Whipple 2018), and (3) turning GAAP earnings losses into non-GAAP profits, or "avoiding losses" (e.g., Bhattacharya, Black, Christensen, and Larson 2003; Brown, Christensen, Elliott, and Mergenthaler 2012). We find that two of the most widely used indicators of exclusion quality (exclusions resulting in meeting/beating analysts' forecasts and turning GAAP losses into non-GAAP profits) do not identify exclusions that are of lower quality than other exclusions. On the other hand, the indicator identifying exclusions resulting in exceeding GAAP earnings performs better, but classifies over 80% of all exclusions

as low quality. We conclude that benchmark-based indicators used in prior studies do not seem to be very effective at identifying aggressive non-GAAP reporting.

We propose a new indicator that relies on the magnitude of unexpected GAAP earnings to identify low-quality non-GAAP exclusions. We conjecture that in cases where GAAP earnings are of high persistence, but mangers disclose non-GAAP earnings anyway, exclusions should be of lower quality (i.e., more persistent). We rely on prior research suggesting that the absolute value of unexpected earnings is negatively correlated with GAAP earnings persistence to identify quarters with highly persistent GAAP earnings (e.g., Freeman and Tse 1992). The rationale behind this notion is that analysts and investors place greater emphasis on forecasting high-persistence components of earnings than low-persistence components because high-persistence components have greater valuation weight. Therefore, forecasts of high-persistence components of earnings will be more accurate than those of low-persistence components. This leads to a negative association between the persistence of GAAP earnings and the absolute magnitude of unexpected earnings.

Our new indicator captures circumstances in which firms disclose non-GAAP earnings when their absolute GAAP surprise (i.e., actual GAAP earnings minus the GAAP earnings analyst consensus forecast) is small, i.e., five, three, or one cent(s) per share or less. We find that our new indicator identifies exclusions that are of lower quality, i.e., highly persistent for both future operating earnings and future operating cash flows. Additionally, we find that the low-quality non-GAAP earnings identified by the indicators used in prior research are more value relevant than GAAP earnings. In other words, even low-quality non-GAAP earnings, as identified by existing indicators, improve upon GAAP earnings. However, our proposed indicator greatly reduces the difference between low-quality non-GAAP value relevance and GAAP value relevance, and in

some circumstances, identifies non-GAAP earnings numbers that are less value relevant than their GAAP counterparts. Overall, our tests suggest that our new indicator performs much better at identifying firm-quarters with lower quality non-GAAP exclusions.

Our analyses are of importance given multiple studies that suggest firms use non-GAAP reporting to meet and beat strategic benchmarks do so for opportunistic reasons (e.g., Bhattacharya et al. 2003; Baik et al. 2008; Heflin and Hsu 2008; Doyle et al. 2013; Bentley et al. 2018). This has led non-GAAP studies over the years to rely on benchmark-based measures of non-GAAP reporting quality under the assumption that, on average, firms that meet or beat earnings benchmarks with non-GAAP numbers when GAAP fails to do so act opportunistically. While our evidence does not suggest that managers do not opportunistically craft non-GAAP earnings to meet or beat strategic benchmarks, it does suggest that on average, many of these benchmark-based indicators do not meaningfully capture exclusion quality. Overall, our results suggest that researchers should exercise caution when relying on benchmark-based indicators of non-GAAP reporting quality.

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| Variable	Definition
Future Operating Earnings	Future operating earnings (Compustat's OEPSXQ x CSHFDQ) summed over quarters q +1 to q +4, divided by total assets (Compustat's ATQ).
Future Operating Cash Flows	Future operating cash flows (Compustat's OANCFY) summed over quarter q +1 to q +4, divided by total assets (Compustat's ATQ).
Return $_{EA}$	Three day cumulative market-adjusted returns over the window from one trading day before to one trading day after the earnings announcement.
Return $_{Qtr}$	Quarterly buy-and-hold returns over the window from two days after the previous earnings announcement through one day following the current earnings announcement.
NG	Manager non-GAAP earnings as reported in the firm's earnings press release, scaled by assets, or (NG per share * CSHFDQ)/ ATQ from Bentley et al. (2018) and Compustat.
Exclusions	The difference between manager non-GAAP earnings and GAAP earnings for the quarter, or ([(NG per share – EPSFIQ) * CSHFDQ] / ATQ from Bentley et al. (2018) and Compustat.
SpecialItems	Defined as operating earnings minus earnings including extraordinary items and multiplied by the number of common shares and scaled by total assets, or [((OEPSXQ – EPSFIQ) * CSHFDQ)/ ATQ] from Compustat.
OtherItems	Exclusions other than special items calculated as *Exclusions* minus *SpecialItems*
Meet/Beat Consensus	An indicator variable equal to one if the firm meets or beats the non-GAAP consensus with non-GAAP earnings and GAAP misses the GAAP consensus, and zero otherwise.
Exceed GAAP	An indicator variable equal to one if non-GAAP earnings in the press exceeds GAAP earnings, and zero otherwise.
Avoid Loss	An indicator variable equal to one if the firm reports a GAAP loss and a non-GAAP profit for a given quarter, and zero otherwise.
|GAAP Surprise| < 5 cents	An indicator variable equal to one if GAAP earnings is within five cents per share of the analyst GAAP earnings consensus, and zero otherwise.
|GAAP Surprise| < 3 cents	An indicator variable equal to one if GAAP earnings is within three cents per share of the analyst GAAP earnings consensus, and zero otherwise.
|GAAP Surprise| < 1 cent	An indicator variable equal to one if GAAP earnings is within one cent per share of the analyst GAAP earnings consensus, and zero otherwise.
Manager Only	An indicator variable equal to one if a manager reports non-GAAP earnings and analysts do not (obtained from Bentley et al. 2018)
Size	The natural log of total assets from Compustat.
BTM	The book-to-market ratio, calculated as sahreholder's equity (SEQ from Compustat) divided by the market value of equity (PRC x SHROUT from CRSP, or MKALTQ or PRCCQ x CSHOQ from Compustat if CRSP data is missing).
Loss	An indicator variable equal to one if the firm reported a GAAP loss, and zero otherwise.
Growth	Sales growth defined as sales during quarter q less sales in quarter q -4 scaled by total assets [(SALEQ$_q$ - SALEQ$_{q-1}$)/ATQ] from Compustat.
Volatility	The standard deviation of ROA (IBQ/ATQ from Compustat) over the last five preceding quarters.

Variable	Definition
NG Surprise	Actual non-GAAP earnings reported by I/B/E/S less the consensus (median) non-GAAP earnings forecast immediately preceding the earnings announcement (EPS from IBES). Scaled by market-value of equity at the end (beginning) of the fiscal quarter for ERC (value-relevance) analysis.
GAAP Surprise	Actual non-GAAP earnings reported by I/B/E/S less the consensus (median) GAAP earnings forecast immediately preceding the earnings announcement (GPS from IBES). Scaled by market-value of equity at the end (beginning) of the fiscal quarter for ERC (value-relevance) analysis.
GAAP	GAAP earnings per share, scaled by assets, or [(EPSFIQ*CSHFDQ)/ATQ] from Compustat.
GAAP Miss < 5 cents	GAAP earninings falls below the GAAP consensus forecast by five cents or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
GAAP Miss < 3 cents	GAAP earninings falls below the GAAP consensus forecast by three cents or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
GAAP Miss < 1 cent	GAAP earnings falls below the GAAP consensus forecast by one cent or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
GAAP Beat < 5 cents	GAAP earninings exceeds the GAAP consensus forecast by five cents or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
GAAP Beat < 3 cents	GAAP earninings exceeds the GAAP consensus forecast by three cents or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
GAAP Beat < 1 cent	GAAP earninings exceeds the GAAP consensus forecast by one cent or less per share, and non-GAAP exceeds the non-GAAP consensus forecast.
|GAAP Surprise| Top Tercile	An indicator variable equal to one if the firms GAAP earnings surprise scaled by assets is the top tercile for the quarter, and zero otherwise.
|GAAP Surprise| Top Quintile	An indicator variable equal to one if the firms GAAP earnings surprise scaled by assets is the top quintile for the quarter, and zero otherwise.
|GAAP Surprise| Top Decile	An indicator variable equal to one if the firms GAAP earnings surprise scaled by assets is the top decile for the quarter, and zero otherwise.
IBES NG	IBES reported non-GAAP earnings, scaled by assets, or (IBES EPS*CSHFDQ)/ ATQ for firm-quarters IBES EPS does not equal GAAP earnings.
IBES Excl	The difference between non-GAAP earnings reported by IBES and GAAP earnings, scaled by assets, or (*IBES NG - GAAP*)
Random Walk Surprise < 5 cents	An indicator variable equal to one if GAAP earnings is within five cents per share of prior quarter GAAP earnings, and zero otherwise.
Seasonal RW Surprise < 5 cents	An indicator variable equal to one if GAAP earnings is within five cents per share of prior-year same-quarter GAAP earnings, and zero otherwise.
ManagerOnly	An indicator variable equal to one if management reports non-GAAP earnings but analyst do not, and zero otherwise.

Figure 1
Exclusion Persistence by GAAP Surprise Decile

Figure 1A
Exclusion Persistence by GAAP Surprise Decile:
Future Operating Earnings

Figure 1B
Exclusion Persistence by GAAP Surprise Decile:
Future Operating Cash Flows
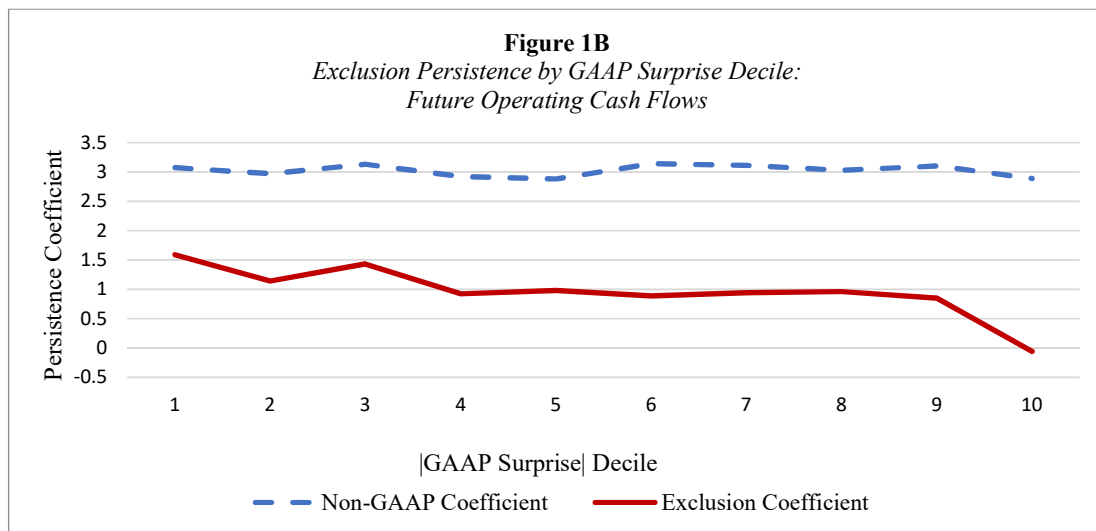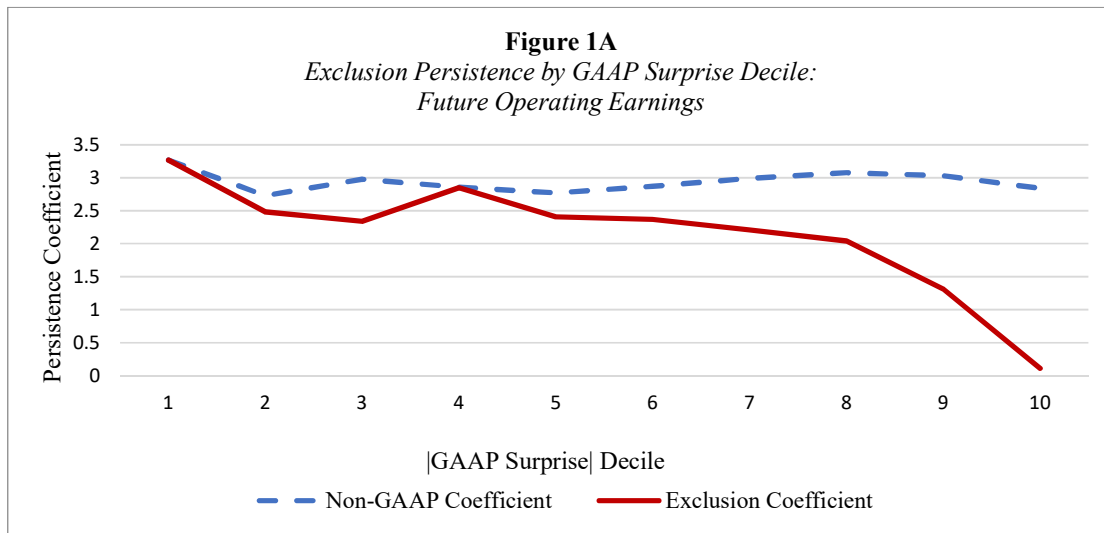
Figure 2

Exclusion Persistence by Special Item Decile

Figure 2A

Exclusion Persistence by Special Item Decile:
Future Operating Earnings

Figure 2B

Exclusion Persistence by Special Item Decile:
Future Operating Cash Flows
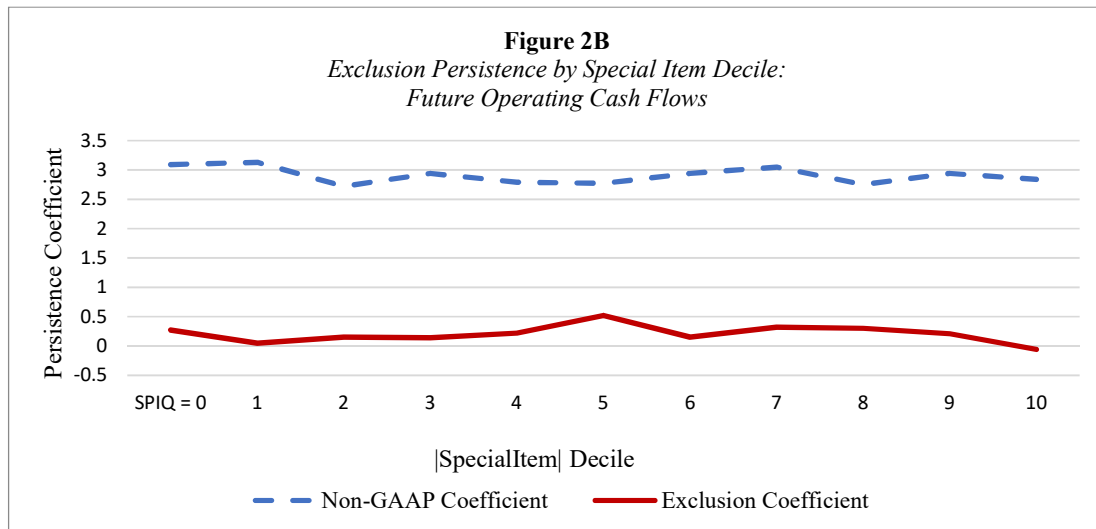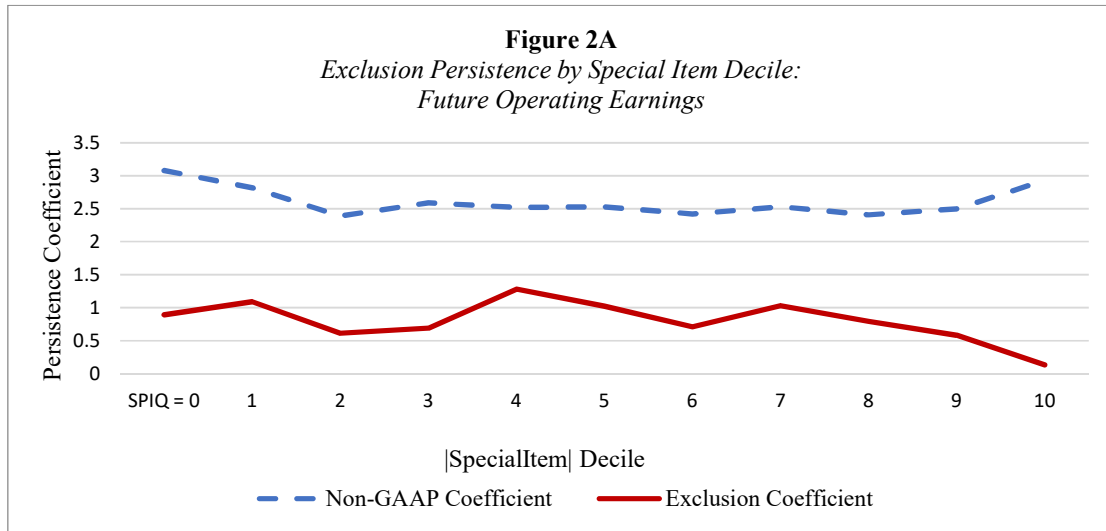
TABLE 1

Sample Attrition

	Firm-Quarters
Firm-quarter observations from the Compustat-CRSP-IBES universe with fiscal quarter-end Jan 2003 - Apr 2016	221,368
Less: utilities firms (SIC 49xx)	(6,958)
Less: financial firms (SIC 6xxx)	(48,932)
Less: stock price below $5	(39,348)
Less: missing manager exclusion data	(90,879)
Less: missing persistence analysis variables	(4,727)
Final Persistence Analysis Sample	30,524
Less: missing ERC/Value-Relevance analysis variables	(3,817)
Final ERC and Value-Relevance Analysis Sample	26,707

This table reports our sample selection.

TABLE 2
Descriptive Statistics

Variable	N	Mean	Median	sd	p25	p75	Min	Max
Operating Cash Flows	30,524	0.11	0.10	0.09	0.06	0.15	(0.15)	0.39
Operating Earnings	30,524	0.05	0.05	0.08	0.02	0.09	(0.26)	0.28
NG	30,524	0.02	0.02	0.02	0.01	0.03	(0.04)	0.08
Exclusions	30,524	0.01	0.00	0.02	0.00	0.01	(0.04)	0.14
SpecialItems	30,524	0.00	0.00	0.01	0.00	0.00	(0.03)	0.10
OtherItems	30,524	0.01	0.00	0.01	(0.00)	0.01	(0.04)	0.09
Meet/Beat Consensus	30,524	0.28	0.00	0.45	0.00	1.00	0.00	1.00
Exceed GAAP	30,524	0.83	1.00	0.37	1.00	1.00	0.00	1.00
Avoid Loss	30,524	0.13	0.00	0.34	0.00	0.00	0.00	1.00
GAAP Surprise < 5 cents	30,524	0.34	0.00	0.47	0.00	1.00	0.00	1.00
GAAP Surprise < 3 cents	30,524	0.28	0.00	0.45	0.00	1.00	0.00	1.00
GAAP Surprise < 1 cents	30,524	0.14	0.00	0.35	0.00	0.00	0.00	1.00
Manager Only	30,524	0.11	0.00	0.32	0.00	0.00	0.00	1.00
Size	30,524	7.39	7.30	1.59	6.23	8.43	4.17	11.53
BTM	30,524	0.47	0.40	0.33	0.24	0.63	(0.10)	1.68
Loss	30,524	0.23	0.00	0.42	0.00	0.00	0.00	1.00
Growth	30,524	0.02	0.01	0.05	(0.00)	0.04	(0.15)	0.19
Volatility	30,524	0.02	0.01	0.02	0.01	0.02	0.00	0.08
Return $_{EA}$	26,709	0.00	0.00	0.08	(0.04)	0.05	(0.26)	0.23
Return $_{Qtr}$	26,709	0.01	0.00	0.17	(0.09)	0.10	(0.43)	0.58
NG Surprise	26,709	0.00	0.00	0.01	0.00	0.00	(0.02)	0.02
GAAP Surprise	26,709	(0.01)	(0.00)	0.03	(0.00)	0.00	(0.21)	0.05

This table presents descriptive statistics of our sample. Appendix A contains all variable definitions.

TABLE 3

Extant Exclusion Quality Indicators and Exclusion Persistence

Quality Indicator	(1) Meet/Beat Consensus	(2) Exceed GAAP	(3) Avoid Loss
Panel A - Future Operating Earnings			
NG	2.84***	2.95***	2.89***
	(40.97)	(31.05)	(42.02)
Exclusions	-0.36***	0.17*	-0.60***
	(-6.28)	(1.84)	(-10.48)
QualityIndicator	-0.01***	-0.01***	-0.01**
	(-4.19)	(-5.81)	(-2.10)
NG × QualityIndicator	0.19***	-0.05	-0.55***
	(2.68)	(-0.57)	(-2.90)
Exclusions × QualityIndicator	**0.12****	**-0.48****	**0.63****
	(2.67)	**(-4.63)**	**(9.14)**
Observations	29,955	29,953	29,943
R-squared	0.609	0.612	0.616
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes
Panel B - Future Operating Cash Flows			
NG	3.01***	3.06***	3.08***
	(39.00)	(26.52)	(39.88)
Exclusions	-0.14**	0.01	-0.24***
	(-2.30)	(0.07)	(-4.84)
QualityIndicator	-0.01***	-0.01***	-0.01***
	(-4.44)	(-5.60)	(-2.74)
NG × QualityIndicator	-0.03	-0.05	-0.87***
	(-0.42)	(-0.52)	(-5.07)
Exclusions × QualityIndicator	**0.09***	**-0.06**	**0.35****
	(1.88)	**(-0.45)**	**(6.63)**
Observations	30,027	30,021	30,022
R-squared	0.469	0.471	0.470
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (1), or *FuturePerformance* $= \alpha_0 + \alpha_1 NG + \alpha_2 Exclusions + \alpha_3 QualityIndicator + \alpha_4 (NG \times QualityIndicator) + \alpha_5 (Exclusions \times QualityIndicator) + Controls + Industry\ FE + Quarter\ FE + \varepsilon$. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Panel A and Panel B, respectively, scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. *QualityIndicator* is equal to one if GAAP falls short of the respective benchmark and non-GAAP exceeds it. Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility).* Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the $p<0.01$ ($p<0.05$, $p<0.10$) level.

TABLE 4

New Exclusion Quality Indicators and Exclusion Persistence

Quality Indicator	(1) |GAAP Surprise| < 5 cents	(2) |GAAP Surprise| < 3 cents	(3) |GAAP Surprise| < 1 cent
Panel A - Future Operating Earnings			
NG	2.80***	2.83***	2.88***
	(38.91)	(39.89)	(41.21)
Exclusions	-0.21***	-0.23***	-0.28***
	(-5.85)	(-6.00)	(-6.81)
QualityIndicator	0.00	0.00	0.00**
	(0.35)	(0.82)	(2.51)
NG × QualityIndicator	0.48***	0.44***	0.37***
	(8.15)	(7.28)	(5.40)
Exclusions × QualityIndicator	**-2.68***	**-2.67***	**-2.71***
	(-27.53)	**(-24.02)**	**(-19.42)**
Observations	29,944	29,943	29,944
R-squared	0.641	0.636	0.624
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes
Panel B - Future Operating Cash Flows			
NG	2.93***	2.95***	2.98***
	(35.90)	(37.32)	(38.22)
Exclusions	-0.11**	-0.11**	-0.12**
	(-2.31)	(-2.37)	(-2.63)
QualityIndicator	0.00	0.00	0.00
	(0.02)	(0.36)	(0.03)
NG × QualityIndicator	0.30***	0.25***	0.21**
	(3.92)	(3.21)	(2.38)
Exclusions × QualityIndicator	**-0.75***	**-0.77***	**-0.87***
	(-6.03)	**(-6.19)**	**(-5.99)**
Observations	30,025	30,026	30,021
R-squared	0.470	0.469	0.469
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (1), or *FuturePerformance* $= \alpha_0 + \alpha_1 NG + \alpha_2 Exclusions + \alpha_3 QualityIndicator + \alpha_4 (NG \times QualityIndicator) + \alpha_5 (Exclusions \times QualityIndicator) + Controls + Industry\ FE + Quarter\ FE + \varepsilon$. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Panel A and Panel B, respectively, scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise is less than or equal to five cents, three cents, or one cent per share in Columns (1), (2), and (3), respectively. Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility).* Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 5

Earnings Response Coefficients of GAAP vs. Low Quality Non-GAAP Earnings

Dependent Variable: *Return $_{EA}$*

Quality Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
			Extant Indicators						New Indicators					
	Full Sample		Meet/Beat Consensus		Exceed GAAP		Avoid Loss		|GAAP Surprise| < 5 cents		|GAAP Surprise| < 3 cents		|GAAP Surprise| < 1 cent	
NG Surprise	4.57***		3.12***		4.82***		4.65***		4.29***		3.39***		2.77***	
	(27.43)		(9.83)		(28.85)		(19.90)		(6.55)		(4.81)		(2.74)	
GAAP Surprise		0.31***		-0.12***		0.29***		0.04		8.52***		8.30***		3.00
		(11.17)		(-3.87)		(10.03)		(1.33)		(5.94)		(5.18)		(0.82)
Observations	26,362	26,362	8,452	8,452	22,249	22,249	3,511	3,511	10,129	10,129	8,444	8,444	4,148	4,148
R-squared	0.086	0.012	0.025	0.003	0.090	0.011	0.089	0.001	0.008	0.009	0.005	0.006	0.003	0.000
Cluster by Qtr	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coefficient Difference	**4.26***		**3.24***		**4.53***		**4.61***		**-4.23***		**-4.91***		**-0.23**	
p-value	**(0.000)**		**(0.000)**		**(0.000)**		**(0.000)**		**(0.000)**		**(0.001)**		**(0.953)**	
R-squared Difference	**0.074***		**0.022***		**0.079***		**0.088***		**-0.001**		**-0.001**		**0.003**	
Vuong Test p-value	**(0.000)**		**(0.000)**		**(0.000)**		**(0.000)**		**(0.887)**		**(0.703)**		**(0.174)**	

This table presents coefficients (t-statistics) from estimating Equations (2) and (3), or $Return_{EA} = \alpha_0 + \alpha_1 Earnings\ Surprise + \varepsilon$ on both a non-GAAP earnings basis *(NG Surprise)* and GAAP earnings basis *(GAAP Surprise)* for the full sample and cross-sections of firms identified by various low-quality indicators. The dependent variable *Return $_{EA}$* equals cumulative market-adjusted returns for the three day window centered on the quarterly earnings announcement. *NG Surprise* equals actual manager non-GAAP earnings less the non-GAAP earnings forecast consensus, scaled by market value of equity at the end of the fiscal quarter. *GAAP Surprise* equals actual GAAP earnings less the GAAP earnings forecast consensus, scaled by market value of equity at the end of the fiscal quarter. The table also presents coefficient and R-squared differences between *NG Surprise* and *GAAP surprise* specifications for each sample examined. P-values for coefficient differences and R-squared differences are based on chi-squared and vuong tests, respectively. Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 6

Value Relevance of GAAP vs. Low Quality Non-GAAP Earnings

Dependent Variable: $Return_{Qtr}$

Quality Indicator	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
			Extant Indicators						New Indicators					
	Full Sample		Meet/Beat Consensus		Exceed GAAP		Avoid Loss		|GAAP Surprise| < 5 cents		|GAAP Surprise| < 3 cents		|GAAP Surprise| < 1 cent	
NG Surprise	7.15***		2.09***		7.41***		7.86***		5.38***		4.62***		3.94***	
	(24.66)		(3.08)		(25.83)		(12.34)		(8.61)		(6.99)		(4.23)	
GAAP Surprise		0.79***		0.26**		0.79***		0.32***		7.73***		8.67***		4.07
		(8.75)		(2.05)		(7.56)		(3.02)		(6.04)		(5.60)		(1.14)
Observations	26,300	26,300	8,449	8,449	22,182	22,182	3,490	3,490	10,132	10,132	8,452	8,452	4,159	4,159
R-squared	0.050	0.016	0.003	0.003	0.052	0.017	0.062	0.006	0.014	0.008	0.011	0.007	0.007	0.001
Cluster by Qtr	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coefficient Difference	**6.36***		**1.83***		**6.62***		**7.54***		**-2.35**		**-4.05***		**-0.13**	
p-value	**(0.000)**		**(0.003)**		**(0.000)**		**(0.000)**		**(0.028)**		**(0.003)**		**(0.973)**	
R-squared Difference	**0.034***		**0.000**		**0.035***		**0.056***		**0.006**		**0.004**		**0.006**	
Vuong Test p-value	**(0.000)**		**(0.920)**		**(0.000)**		**(0.000)**		**(0.037)**		**(0.274)**		**(0.025)**	

This table presents coefficients (t-statistics) from estimating Equations (2) and (3), or $Return_{Qtr} = \alpha_0 + \alpha_1 Earnings\ Surprise + \varepsilon$ on both a non-GAAP earnings basis *(NG Surprise)* and GAAP earnings basis *(GAAP Surprise)* for the full sample and cross-sections of firms identified by various low-quality indicators. The dependent variable $Return_{Qtr}$ equals buy-and-hold returns over the window from two days after the previous earnings announcement through one day following the current earnings announcement. *NG Surprise* equals actual manager non-GAAP earnings less the non-GAAP earnings forecast consensus, scaled by market value of equity at the beginning of the fiscal quarter. *GAAP Surprise* equals actual GAAP earnings less the GAAP earnings forecast consensus, scaled by market value of equity at the beginning of the fiscal quarter. The table also presents coefficient and R-squared differences between *NG Surprise* and *GAAP surprise* specifications for each sample examined. P-values for coefficient differences and R-squared differences are based on chi-squared and vuong tests, respectively. Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 7

Large GAAP Surprises and Exclusion Persistence

Quality Indicator	(1) |GAAP Surprise| Top Tercile	(2) |GAAP Surprise| Top Quintile	(3) |GAAP Surprise| Top Decile
Panel A - Future Operating Earnings			
NG	3.11***	3.12***	3.09***
	(41.56)	(43.20)	(42.12)
Exclusions	-2.64***	-2.46***	-1.83***
	(-24.13)	(-18.30)	(-9.41)
QualityIndicator	-0.01***	-0.02***	-0.02***
	(-8.31)	(-9.71)	(-6.62)
NG × QualityIndicator	-0.05	0.01	0.08
	(-0.73)	(0.14)	(0.90)
Exclusions × QualityIndicator	**2.47***	**2.36***	**1.79***
	(23.98)	**(19.26)**	**(9.38)**
Observations	26,428	26,416	26,412
R-squared	0.646	0.655	0.649
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes
Panel B - Future Operating Cash Flows			
NG	3.02***	3.05***	3.07***
	(33.73)	(35.49)	(37.81)
Exclusions	-0.84***	-0.89***	-0.75***
	(-7.79)	(-8.35)	(-4.67)
QualityIndicator	-0.00**	-0.01***	-0.01***
	(-2.06)	(-2.78)	(-3.64)
NG × QualityIndicator	0.01	0.00	-0.00
	(0.18)	(0.04)	(-0.05)
Exclusions × QualityIndicator	**0.75***	**0.83***	**0.75***
	(7.00)	**(8.85)**	**(4.90)**
Observations	26,507	26,501	26,496
R-squared	0.473	0.476	0.478
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (1), or *FuturePerformance* = α_0 + $\alpha_1 NG$ + $\alpha_2 Exclusions$ + $\alpha_3 QualityIndicator$ + $\alpha_4 (NG \times QualityIndicator)$ + $\alpha_5 (Exclusions \times QualityIndicator)$ + *Controls + Industry FE + Quarter FE* + ε. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Panel A and Panel B, respectively, scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise scaled by assets in the top tercile, quintile, or decile in Columns (1), (2), and (3), respectively. Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility).* Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 8

New Exclusion Quality Indicators and GAAP Persistence

Quality Indicator	(1) |GAAP Surprise| < 5 cents	(2) |GAAP Surprise| < 3 cents	(3) |GAAP Surprise| < 1 cent
Panel A - Future Operating Earnings			
GAAP	0.96***	1.02***	1.15***
	(12.57)	(12.76)	(13.65)
QualityIndicator	-0.03***	-0.03***	-0.03***
	(-19.77)	(-20.50)	(-17.09)
GAAP × QualityIndicator	**1.81*****	**1.74*****	**1.57*****
	(22.60)	**(21.12)**	**(16.33)**
Observations	29,895	29,903	29,914
R-squared	0.522	0.509	0.482
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes
Panel B - Future Operating Cash Flows			
GAAP	0.95***	0.99***	1.09***
	(11.10)	(11.55)	(12.58)
QualityIndicator	-0.02***	-0.02***	-0.02***
	(-7.73)	(-8.27)	(-8.23)
GAAP × QualityIndicator	**1.43*****	**1.36*****	**1.25*****
	(15.24)	**(14.69)**	**(13.10)**
Observations	30,057	30,067	30,081
R-squared	0.331	0.324	0.311
Controls	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (4), or *FuturePerformance* = α_0 + α_1 *GAAP* + α_2 *QualityIndicator* + α_3 *(GAAP×QualityIndicator)* + *Controls* + *Industry FE* + *Quarter FE* + ε. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Panel A and Panel B, respectively, scaled by assets. *GAAP* equals GAAP earnings scaled by assets. *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise is less than or equal to five cents, three cents, or one cent per share in Columns (1), (2), and (3), respectively. Controls include the natural log of assets *(Size)*, book-to-market *(BTM)*, a GAAP loss firm indicator *(Loss)*, sales growth *(Growth)*, and earnings volatility *(Volatility)*. Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 9
Just Miss and Just Beat Exclusion Persistence

Quality Indicator	Just Miss			Just Beat		
	(1)	(2)	(3)	(5)	(6)	(7)
	GAAP Miss < 5 cents	GAAP Miss < 3 cents	GAAP Miss < 1 cent	GAAP Beat < 5 cents	GAAP Beat < 3 cents	GAAP Beat < 1 cent
Panel A - Future Operating Earnings						
NG	2.87***	2.87***	2.88***	2.87***	2.87***	2.89***
	(41.03)	(41.10)	(40.95)	(40.89)	(40.89)	(41.40)
Exclusions	-0.31***	-0.31***	-0.32***	-0.29***	-0.29***	-0.31***
	(-7.06)	(-7.03)	(-6.98)	(-6.78)	(-6.78)	(-6.95)
QualityIndicator	0.00**	0.00**	0.00**	0.00	0.00	0.01***
	(2.30)	(2.04)	(2.04)	(1.63)	(1.37)	(3.09)
NG × QualityIndicator	0.38***	0.41***	0.42***	0.38***	0.36***	0.20*
	(4.55)	(4.54)	(3.78)	(5.03)	(4.61)	(1.99)
Exclusions × QualityIndicator	**-2.46***	**-2.56***	**-2.57***	**-2.59***	**-2.50***	**-2.64***
	(-20.52)	**(-23.37)**	**(-13.83)**	**(-18.04)**	**(-14.84)**	**(-11.56)**
Observations	29,949	29,951	29,953	29,948	29,948	29,951
R-squared	0.618	0.617	0.613	0.619	0.619	0.614
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes	Yes	Yes	Yes
Panel B - Future Operating Cash Flows						
NG	2.98***	2.98***	2.99***	2.96***	2.96***	2.99***
	(39.22)	(39.31)	(39.23)	(38.11)	(38.11)	(39.00)
Exclusions	-0.13***	-0.13***	-0.13***	-0.13***	-0.13***	-0.13***
	(-2.73)	(-2.73)	(-2.75)	(-2.67)	(-2.67)	(-2.72)
QualityIndicator	-0.00**	-0.01**	-0.01	-0.00	0.00	-0.00
	(-2.07)	(-2.33)	(-1.48)	(-0.01)	(0.28)	(-0.00)
NG × QualityIndicator	0.18*	0.22**	0.17	0.34***	0.27***	0.23
	(1.81)	(2.36)	(1.16)	(3.60)	(2.68)	(1.63)
Exclusions × QualityIndicator	**-0.34***	**-0.30***	**-0.11**	**-0.57***	**-0.59***	**-0.71***
	(-1.87)	**(-1.75)**	**(-0.51)**	**(-3.74)**	**(-3.66)**	**(-3.39)**
Observations	30,023	30,022	30,023	30,023	30,023	30,027
R-squared	0.468	0.468	0.468	0.468	0.468	0.468
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes	Yes	Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (1), or *FuturePerformance* $= \alpha_0 + \alpha_1 NG + \alpha_2 Exclusions + \alpha_3 QualityIndicator + \alpha_4(NG \times QualityIndicator) + \alpha_5(Exclusions \times QualityIndicator) + Controls + Industry\ FE + Quarter\ FE + \varepsilon$. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Panel A and Panel B, respectively, scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. In Columns (1), (2), and (3, *QualityIndicator* is equal to one if GAAP just misses the analyst GAAP consensus by five cents, three cents, or one cent, respecively, and non-GAAP exceeds the anayst non-GAAP consensus. In Columns (4), (5), and (6), *QualityIndicator* is equal to one if GAAP just beats the analyst GAAP consensus by five cents, three cents, or one cent, respecively, and non-GAAP exceeds the anayst non-GAAP consensus. Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility).* Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 10

Exclusion Persistence and Exclusion Quality Indicators by Exclusion Type

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Future Operating Earnings			Future Operating Cash Flows		
	|GAAP Surprise| < 5 cents	|GAAP Surprise| < 3 cents	|GAAP Surprise| < 1 cent	|GAAP Surprise| < 5 cents	|GAAP Surprise| < 3 cents	|GAAP Surprise| < 1 cent
NG	2.83***	2.86***	2.92***	2.93***	2.96***	2.99***
	(39.17)	(40.45)	(42.36)	(35.88)	(37.32)	(38.22)
SpecialItems	0.33***	0.36***	0.41***	-0.02	-0.02	-0.00
	(8.34)	(9.08)	(10.30)	(-0.46)	(-0.36)	(-0.03)
OtherItems	-0.79***	-0.86***	-0.99***	-0.19***	-0.20***	-0.24***
	(-10.38)	(-10.85)	(-12.67)	(-2.84)	(-3.01)	(-3.61)
QualityIndicator	0.00	0.00	0.00**	0.00	0.00	0.00
	(0.30)	(0.71)	(2.32)	(0.03)	(0.37)	(0.13)
NG × QualityIndicator	0.45***	0.41***	0.33***	0.30***	0.24***	0.20**
	(7.52)	(6.63)	(4.78)	(3.88)	(3.15)	(2.31)
SpecialItems × QualityIndicator	**-1.07***	**-1.14***	**-1.41***	**-0.31**	**-0.28**	**-0.75***
	(-5.93)	**(-6.07)**	**(-5.46)**	**(-1.13)**	**(-0.99)**	**(-1.95)**
OtherItems × QualityIndicator	**-2.44***	**-2.37***	**-2.31***	**-0.76***	**-0.79***	**-0.84***
	(-21.99)	**(-19.64)**	**(-15.45)**	**(-5.50)**	**(-5.77)**	**(-5.74)**
Observations	29,944	29,943	29,944	30,025	30,026	30,021
R-squared	0.657	0.654	0.646	0.471	0.470	0.470
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes	Yes	Yes	Yes
Special vs Other Item Interaction-Coefficient Difference	**-1.37***	**-1.23***	**-0.90***	**-0.45**	**-0.51***	**-0.09**
p-value	**(0.000)**	**(0.000)**	**(0.004)**	**(0.119)**	**(0.093)**	**(0.827)**

This table presents coefficients (t-statistics) from estimating Equation (1) after decomposing total exclusions *(Exclusions)* into special items *(SpecialItems)* and other item exclusions *(OtherItems),* or *FuturePerformance = α_0 + α_1 NG + α_2 SpecialItems + α_3 OtherItem + α_4 QualityIndicator + α_5 (NG×QualityIndicator) + α_6 (SpecialItems×QualityIndicator) + α_7 (OtherItems×QualityIndicator) + Controls + Industry FE + Quarter FE + ε*. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4 in Columns (1) - (3) and Columns (4) - (6), respectively, scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *SpecialItem* equals operating earnings minus earnings including extraordinary items, scaled by assets. *OtherItems* equals total exclusions *(Exclusions)* less special item exclusions *(SpecialItems)*. *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise is less than or equal to five cents per share (Columns 1 and 4), three cents per share (Columns 2 and 5), or one cent per share (Columns 3 and 6). Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility)*. The table also presents coefficient and R-squared differences between the *SpecialItem* and *OtherItem* interaction coefficients (α_6 less α_7). P-values for interaction coefficient differences are based on chi-squared tests. Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 11

Full IBES Sample and Alternative GAAP Expectation Models

Dependent Variable	(1)	(2)	(3)	(4)	(5)	(6)
	Future Operating Earnings			Future Operating Cash Flows		
	|GAAP Surprise| < 5 cents	|GAAP Surprise| < 3 cents	|GAAP Surprise| < 1 cent	|GAAP Surprise| < 5 cents	|GAAP Surprise| < 3 cents	|GAAP Surprise| < 1 cent
Panel A - Full IBES Sample						
IBES NG	3.36***	3.36***	3.35***	3.29***	3.29***	3.28***
	(73.22)	(73.44)	(73.23)	(70.51)	(70.86)	(71.12)
IBES Excl	-0.50***	-0.53***	-0.58***	-0.32***	-0.32***	-0.34***
	(-10.47)	(-10.95)	(-11.56)	(-6.31)	(-6.38)	(-6.59)
QualityIndicator	0.01***	0.00***	0.00**	0.00	0.00	0.00
	(3.55)	(2.86)	(2.19)	(1.60)	(1.55)	(0.75)
IBES NG × QualityIndicator	0.01	0.04	0.08	-0.05	-0.07	-0.02
	(0.18)	(0.57)	(1.01)	(-0.57)	(-0.75)	(-0.22)
IBES Excl × QualityIndicator	**-2.92*****	**-2.94*****	**-2.92*****	**-0.58*****	**-0.58*****	**-0.71*****
	(-23.56)	**(-21.44)**	**(-17.88)**	**(-3.58)**	**(-3.60)**	**(-4.86)**
Observations	75,596	75,597	75,610	75,845	75,846	75,844
R-squared	0.760	0.758	0.755	0.574	0.574	0.574
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes	Yes	Yes	Yes	Yes
		Random Walk < 5 cents	Seasonal RW < 5 cents		Random Walk < 5 cents	Seasonal RW < 5 cents
Panel B - Alternative GAAP Expectation Models						
NG		2.75***	2.88***		2.85***	2.97***
		(39.09)	(40.81)		(37.78)	(37.97)
Exclusions		-0.23***	-0.25***		-0.11**	-0.10**
		(-6.12)	(-6.12)		(-2.45)	(-2.20)
QualityIndicator		-0.00***	0.00**		-0.01***	0.00
		(-2.86)	(2.16)		(-3.40)	(0.14)
NG × QualityIndicator		0.77***	0.38***		0.68***	0.27***
		(10.65)	(5.23)		(8.62)	(3.06)
Exclusions × QualityIndicator		**-2.46*****	**-2.37*****		**-0.90*****	**-0.93*****
		(-21.64)	**(-21.25)**		**(-5.99)**	**(-6.87)**
Observations		29,945	29,931		30,029	30,027
R-squared		0.639	0.628		0.472	0.469
Controls		Yes	Yes		Yes	Yes
Cluster by Firm and Qtr		Yes	Yes		Yes	Yes

This table presents coefficients (t-statistics) from estimating Equation (1) using the full IBES sample and IBES non-GAAP in Panel A and alternative GAAP expectation models in Panel B. The dependent variable *FuturePerformance* equals *Operating Earnings* and *Operating Cash Flow* summed over quarters q+1 through q+4 in Columns (1) - (3) and Columns (4) - (6), respectively, scaled by assets. *IBES NG* equals non-GAAP earnings reported in IBES scaled by assets. *IBES Excl* equals non-GAAP exclusions reported in IBES scaled by assets. *NG* equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. In Panel A, *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise is less than or equal to five cents per share (Columns 1 and 4), three cents per share (Columns 2 and 5), or one cent per share (Columns 3 and 6). In Panel B, *QualityIndicator* is equal to one if the absolute value of the GAAP earnings surprise based on random walk (GAAP less Prior Quarter GAAP) and seasonal random walk (GAAP Less Prior Year GAAP) expectation models is less than or equal to five cents per share. Controls include the natural log of assets *(Size),* book-to-market *(BTM),* a GAAP loss firm indicator *(Loss),* sales growth *(Growth),* and earnings volatility *(Volatility).* Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.

TABLE 12
Manager Only non-GAAP Persistence, ERCs, and Value Relevance

Dependent Variable	Future Operating Earnings	Future Operating Cash Flow
Panel A - Exclusion Persistence		
NG	2.85***	2.99***
	(39.04)	(38.91)
Exclusions	-0.28***	-0.09*
	(-6.39)	(-1.89)
ManagerOnly	-0.00	-0.00
	(-0.25)	(-0.82)
NG × ManagerOnly	0.26**	0.06
	(2.19)	(0.45)
Exclusions × ManagerOnly	**-0.64***	**-0.54***
	(-6.42)	**(-4.83)**
Observations	29,942	30,027
R-squared	0.613	0.470
Controls	Yes	Yes
Cluster by Firm and Qtr	Yes	Yes

Dependent Variable	ManagerOnly Sample			
	Return $_{EA}$		Return $_{Qtr}$	
Panel B - ERCs & Value Relevance				
NG Surprise	2.35***		3.09***	
	(8.59)		(4.97)	
GAAP Surprise		0.68***		1.45***
		(3.87)		(5.27)
Observations	2,852	2,852	2,828	2,828
R-squared	0.041	0.016	0.018	0.018
Cluster by Qtr	Yes	Yes	Yes	Yes
Slope Difference		**1.67***		**1.640***
p-value		**(0.000)**		**0.001**
R-squared Difference		**0.026***		**0.000**
Vuong Test p-value		**(0.002)**		**0.974**

Panel A presents coefficients (t-statistics) from estimating Equation (1), or *FuturePerformance* = α_0 + α_1NG + α_2*Exclusions* + α_3*ManagerOnly* + α_4(NG×ManagerOnly) + α_5(Exclusions×ManagerOnly) + Controls + Industry FE + Quarter FE + ε. The dependent variable *FuturePerformance* equals Operating Earnings and Operating Cash Flow summed over quarters q+1 through q+4, scaled by assets. NG equals manager non-GAAP earnings scaled by assets. *Exclusions* equals manager non-GAAP earnings less GAAP earnings scaled by assets. *ManagerOnly* is an indicator equal to one if management reported non-GAAP earnings and analyst did not. Controls include the natural log of assets *(Size)*, book-to-market *(BTM)*, a GAAP loss firm indicator *(Loss)*, sales growth *(Growth)*, and earnings volatility *(Volatility)*. Panel B presents coefficients (t-statistics) from estimating Equations (2) and (3) for the cross-section of firms where ManagerOnly equals one. *Return* $_{EA}$ equals cumulative market-adjusted returns for the three day window centered on the quarterly earnings announcement. *Return* $_{Qtr}$ equals buy-and-hold returns over the window from two days after the previous earnings announcement through one day following the current earnings announcement. NG Surprise equals actual manager non-GAAP earnings less the non-GAAP earnings forecast consensus, scaled by market value of equity at the beginning of the quarter. *GAAP Surprise* equals actual GAAP earnings less the GAAP earnings forecast consensus, scaled by market value of equity at the beginning of the quarter. The table also presents coefficient and R-squared differences between NG Surprise and *GAAP surprise* specifications for each sample examined. P-values for coefficient differences and R-squared differences are based on chi-squared and vuong tests, respectively. Appendix A contains all variable definitions. *** (**, *) denotes two-tailed significance at the p<0.01 (p<0.05, p<0.10) level.