THE RISE AND RISE OF NON-GAAP DISCLOSURE
A survey of Australian practice and its implications

Jeff Coulton, Andrea Ribeiro, Yaowen Shan and Stephen Taylor
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Preface

Research into financial accounting issues is critical for society and the quality of debate in the accounting profession globally. Chartered Accountants Australia and New Zealand is excited to publish this substantial research monograph: The Rise and Rise of Non-GAAP Disclosure: A Survey of Australian Practice and its Implications. A significant finding of the research is that the rise in non-GAAP reporting and the use of such metrics in CEO compensation contracts is in contrast to the shift in focus from the income statement to the balance sheet that underlies the evolution of accounting standards, and raises concerns about the design of effective compensation contracts. It also represents a significant challenge to accounting standard setters and, more broadly, regulators of financial markets.

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Our funded research projects are widely promoted through our publications and on our website. Acuity magazine – our flagship publication distributed to our members – includes feature articles on our funded research. This Chartered Accountants Australia and New Zealand academic research monograph series shares the final reports of funded reports, and our Educators Enews has a wealth of information.

The findings of this research monograph present several challenges for the professional bodies, regulators, and accounting educators. I am grateful to the researchers for their work and look forward to our continued involvement in this important debate.

Professor James Guthrie FCA

Head of Academic Relations, Chartered Accountants Australia and New Zealand
The extensive database construction required for this research was funded by a grant from the Centre for International Finance and Regulation (CIFR), with additional funding from the University of Technology Sydney. CIFR was established by the Commonwealth Government to fund high-quality research in areas relevant to the further development of capital markets, especially issues related to regulatory frameworks and their implementation. The researchers also received database design and construction support from the Securities Industry Centre of Asia-Pacific. We appreciate the research assistance of Alex Tong.
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Abstract

This monograph provides a detailed summary of how Australian firms report their financial performance. While applicable standards within Generally Accepted Accounting Principles (GAAP) have increasingly restricted the ability to exclude certain components from the calculation of periodic income, we observe a consistent growth in the extent to which Australian firms promote alternative (i.e., non-GAAP) income measures. We show that this behaviour has increased significantly over the period we survey, and provide extensive descriptive evidence of how non-GAAP results differ from those that are reported in compliance with accounting standards. We also review the regulation of this practice, and provide a detailed discussion of the possible reasons for its increase, as well as the possible consequences. In doing so, we provide a detailed review of existing research examining the provision of non-GAAP income measures. Our over-riding conclusion is that there are competing objectives underlying these disclosures (i.e., self-interest versus better information for stakeholders), and the resulting consequences of these disclosures will also vary in line with the dominant motivation for their supply. We also highlight the manner in which non-GAAP reporting can be seen as a challenge to accounting standard setters and regulators of financial reporting, and contrast the direction of ‘top down’ standard setting with observations from practice.
Introduction

It has long been recognised that periodic financial reports, while not especially timely, nevertheless represent an important source of information for capital market participants (Ball and Brown, 1968; Ball and Shivakumar, 2008). The regulation of accounting information via accounting standards and enforcement agencies, along with the role of external auditors, is largely assumed to result in financial reporting that is comparable between firms (i.e., similar economic transactions are accounted for in the same manner). Temporal variation in the way a given transaction is recorded is assumed largely attributable to changes in the accounting standards, or possibly a substantial change in the underlying business model. However, recent years have seen a marked rise in the frequency with which firms prominently report alternative financial performance metrics (‘non GAAP’ metrics) such as ‘underlying profit’, ‘cash profit’, ‘recurring earnings’ and the like. This monograph provides a detailed survey of Australian firms’ use of non-GAAP reporting from 2000 to 2014 inclusive.

A fundamental role of accounting standards is to provide a relatively uniform basis on which specific transactions are accounted for, and the resulting measures of performance computed. This is commonly referred to as ‘comparability’. However, the increasing propensity and attention given to firm-specific (or even firm-year-specific) performance measures surely represents a challenge to accounting standard setters and associated enforcement agencies. While standard setters argue that standards are set on the basis of broad-based principles (what we would call a ‘top down’ approach), observation of non-GAAP reporting potentially provides another perspective on desirable attributes of financial reporting. It provides a ‘bottom up’ view of what managers and directors perceive to be an ‘appropriate’ measure of periodic performance, and is therefore informative of which properties preparers (at least) think are desirable.

A detailed understanding of the practice of non-GAAP reporting directly addresses the call by CFOs to allow reporting choices (i.e., accounting standards) to evolve from practice (Dichev et al., 2013). Dichev (2015) argues that ‘bottom up’ reporting is desirable because it incorporates ‘the critical unseen factor of context’. Non-GAAP reporting potentially provides such an insight into the measurement and reporting of periodic performance. By providing a detailed survey of the development of non-GAAP reporting by publicly traded Australian firms, we hope to gain a better understanding of what periodic financial performance is from a preparer’s perspective, and thereby enable a clear contrast between the position taken by firms and that reflected in the GAAP definition of periodic income.

We identify two recent developments in accounting standard setting as having impacted the reporting of periodic income. First, the increasing use of market values (or their approximation) as a measurement basis. Increasing reliance on market values is also consistent with a balance sheet perspective on measurement and, consequently, reporting of periodic performance. Hence, the second important development we observe is that the income statement (i.e., the reporting of periodic financial performance) is increasingly seen as being

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1. Throughout the paper, we use the term ‘non-GAAP earnings’ for performance measures disclosed by management that do not directly conform with applicable accounting standards. In contrast, we use the term ‘street earnings’ specifically for income measures reported by analysts’ forecast services, such as I/B/E/S and Thomson Datastream.

2. There are many terms used to describe non-GAAP definitions of earnings. These include (among other terms) cash earnings, underlying profit, recurring profits, pro-forma earnings and normalised earnings. For the purpose of our discussion, we define all such metrics as non-GAAP earnings.
subsidiary to the balance sheet, with income increasingly approaching the change in financial position as portrayed by consecutive balance sheets (Dichev, 2015). However, even a casual inspection of the increasing prevalence of non-GAAP reporting among Australian firms suggests that the definition and presentation of income as a measure of periodic financial performance is moving in precisely the opposite direction to these important underlying perspectives reflected in changes to accounting standards. To that extent, a detailed analysis of what firms voluntarily provide, and how it differs from what accounting standards prescribe, has potentially important lessons for standard setters and regulatory agencies.

The disclosure of non-GAAP measures of income initially became popular in the US in the late 1990s, but has subsequently been subject to relatively strict regulation. In contrast, this practice has been relatively unregulated in markets outside the US even after the adoption of International Financial Reporting Standards (IFRS). For example, with the Australian implementation of IFRS in 2005, anecdotal evidence suggests there has been a marked jump in the frequency and prominence of this type of reporting.3

However, consistent growth in the reporting of non-GAAP earnings metrics raises serious questions about the underlying motives for their promulgation. On the one hand, managers may believe that non-GAAP measures can provide a better indication of the company’s underlying performance, and thereby better inform investors about the ‘true’ performance and/or economic position of the firm. Such reasoning may be exacerbated by changes in accounting standards, whereby GAAP-based measures become more volatile and/or an increasing degree of unrealised gains or losses are included in the GAAP definition of income. The change in accounting standards from Australian GAAP (A-GAAP) to Australian equivalents to IFRS (A-IFRS) is sometimes characterised as imposing these types of changes. However, it is also possible that managers may be acting opportunistically, attempting to mislead investors by drawing their attention away from the ‘true’ position by selectively excluding certain components that are integral to the calculation of the statutory definition of income (i.e., income as defined by GAAP).

Our objectives in this monograph are twofold. First, we present evidence on the characteristics of non-GAAP disclosures around the world, with a particular focus on the Australian market. We start by summarising and comparing existing US-based and global evidence on the tendency, trend and industry concentration of non-GAAP disclosures, the relative difference between the disclosed non-GAAP and GAAP figures, and the specific items excluded from GAAP earnings to derive non-GAAP numbers. After briefly reviewing the regulation of non-GAAP reporting in Australia, we then provide a detailed descriptive analysis of non-GAAP disclosures in Australia using a comprehensive database of actual non-GAAP disclosures over 2000–2014. This is the most comprehensive review of non-GAAP reporting by Australian firms undertaken so far, and provides evidence of a persistent overall increase in non-GAAP income disclosures, as well as an increase

3. For example, a survey of the largest 100 firms listed on the Australian Stock Exchange (ASX) reported that during 2008 and 2009, over 80% of these firms disclosed at least one non-GAAP definition of earnings (KPMG, 2010). There is also increasing evidence of explicit industry support for the reporting of non-GAAP earnings results. For example, a publication issued jointly by the Australian Institute of Company Directors and the Financial Services Institute of Australia in 2009 argues that ‘reporting of additional, non-statutory financial information can provide valuable information to shareholders and the wider investment community about the performance of a company’ (AICD/FINSIA, 2009, p. 7).
in the rate at which such disclosures are accompanied by substantive reconciliations with the equivalent GAAP definition of income. We show that non-GAAP measures are substantially less volatile than their GAAP equivalents, with substantially fewer extremes in year-to-year comparisons. This is consistent with non-GAAP measures being more predictable than their GAAP equivalent. Finally, there is evidence of marked convergence in the terminology, with more companies favouring the use of terms such as ‘underlying profit’ or ‘underlying earnings’.

Second, we conduct a comprehensive review of the extant non-GAAP literature that aims to increase our understanding of the causes and consequences of non-GAAP measures of income around the globe. Our primary focus is on gaining a better understanding of the following specific questions.

1. What is the key motive of non-GAAP reporting? Is it the provision of useful information to external stakeholders, or is it simply opportunistic?

2. What are the roles of internal governance, executive compensation and external auditors in shaping non-GAAP reporting practice?

3. Can professional and non-professional investors fully understand the information contained in non-GAAP disclosures? Are their trading behaviours systematically influenced by the presence and/or the emphasis of non-GAAP figures?

4. What can we learn from the evolving regulation of non-GAAP disclosures in the US? Have regulatory changes in the US led to the disclosure of higher quality non-GAAP information?
Prevalence of non-GAAP reporting

GLOBAL EVIDENCE

GAAP reflect rules, standards and regulations promulgated by standard setters to govern accounting practice and the preparation of financial statements. GAAP, as a set of common rules for financial reporting, thus ensure a certain level of transparency, reliability and consistency with respect to a firm’s financial reporting outputs, and also allow stakeholders to compare financial statements across corporations and over time. Indeed, comparability is presented as a basic property of financial information that is fundamental to achieving decision usefulness (IASB, 2010), and its fundamental nature as a desirable attribute has not been questioned in a recent review of the Conceptual Framework (IASB, 2015). However, since GAAP imposes a degree of uniformity in financial reporting practices, especially on corporations with substantial heterogeneity of business operation and economic activities, the reported earnings from the accounting system may fail to provide a timely reflection of the firm’s underlying operating performance. For example, Lev and Zarowin (1999) document a steady decline in the value-relevance of earnings from 1977 to 1997. Collins et al. (1997) confirm the decline and show that GAAP earnings numbers became a relatively noisy measure of a firm’s underlying performance in the 1990s largely due to the increasing frequency and magnitude of one-off items. Therefore, demand potentially arises for adjusted GAAP earnings that exclude non-cash and one-off items required under GAAP so as to provide a more informative periodic measure of corporate performance.

Extant literature in the US shows that the prevalence of non-GAAP reporting increased substantially from the early 1980s until the adoption of Regulation G in 2003. Table 1 (see Appendix – Table 1) summarises the preliminary evidence on non-GAAP disclosures among US firms presented in selected large-sample US studies. For example, Entwistle et al. (2005) show that 77% of the S&P 500 US firms reported non-GAAP earnings figures in 2001, while Bhattacharya et al. (2004) show that from 1998 to 2000 there was a very substantial increase in such non-GAAP disclosures. Similarly, Zhang and Zheng (2011) find the frequency of non-GAAP reporting increased significantly over the period 1998–2001. Black et al. (2012) likewise document an increase in non-GAAP reporting frequency over the period 1998–2006.

Consequently, the literature has also documented consistent evidence of a decrease in the propensity of non-GAAP reporting in the US after the adoption of Regulation G in 2003 (Entwistle et al., 2006; Marques, 2006; Heflin and Hsu, 2008). For example, Entwistle et al. (2006) document that the likelihood of reporting non-GAAP earnings declined from 77% of S&P 500 firms in 2001 to 54% in 2003.

Table 2 (see Appendix – Table 2) summarises preliminary evidence on non-GAAP reporting in countries outside the US. Evidence outside the US also supports the view that non-GAAP disclosure is an increasingly common global phenomenon, especially among large listed companies. Entwistle et al. (2005) show that 42% of the S&P 300 Canadian firms reported non-GAAP numbers in 2001. Choi et al. (2007) and Choi and Young (2015) study the largest...
500 non-financial companies listed on the London Stock Exchange. They report that 39% of sample firms disclosed non-GAAP earnings per share (EPS) in 1994, increasing to 53% in 1996 and 76% by 2001. Hitz (2010) surveys German listed firms on the Frankfurt Stock Exchange DAX (30 largest) and MDAX (50 second largest) indices, and documents 86% of firms report at least one non-GAAP measure. Isidro and Marques (2015) examine the 500 largest European companies based on a Financial Times 2006 classification, and find that the frequency of non-GAAP disclosure ranges from 55% to 67%. However, only 30.3% of the firms were consistently reporting non-GAAP earnings over the entire period examined (2003–2007). In addition, Rainsbury et al. (2013) report that the frequency of non-GAAP reporting in New Zealand firms on the NZX Top 50 Index increased from 10% in 2004 to 40% in 2011.5

Non-GAAP disclosures have also been shown to cluster in certain industries and firms with specific characteristics. In the US, Bhattacharya et al. (2004) report a high concentration of non-GAAP reporting among firms classified as business services, and especially technology-related services (49.9%) and manufacturing (30.7%). Similarly, Zhang and Zheng (2011) show that high-tech firms comprise 59.10% of the non-GAAP reporters in their sample and 84% of the non-GAAP disclosing firms that are listed on the NASDAQ. Aubert and Grudnitski (2014) examine 314 European firms from 12 Eurozone countries over 2008–2011. They show that, of the 989 firm-years in the sample, Finance and Manufacturing are the two major industry sectors, comprising 18.40% and 9% respectively. Isidro and Marques (2015) find that non-GAAP reporters among the 500 largest European companies (based on Financial Times 2006) classification tend to concentrate among the Manufacturing (29%), Materials and Electronics (19%) and Transportation and Communication (17%) industries.

Clustering of non-GAAP disclosers among certain industry groups could occur for a number of reasons. Lougee and Marquardt (2004) document that non-GAAP disclosures in the US are more likely to be firms with low GAAP earnings informativeness, greater sales growth and greater earnings variability. Bowen et al. (2005) also find that greater emphasis is placed on non-GAAP earnings when GAAP earnings are less value-relevant, such as in high-technology industries and where there is a history of prior losses.

While non-GAAP earnings figures are typically derived from GAAP earnings by excluding items argued to be one-off, non-operating or non-cash (or any combination of these), the documented difference between non-GAAP and GAAP earnings differs substantially across countries and over time. Bhattacharya et al. (2004) document that the average GAAP EPS is a net loss of 14.7 cents per share (1998–2000), while the corresponding non-GAAP average for the same set of observations is a net income of 8.5 cents per share. Zhang and Zheng (2011) find that the mean difference between non-GAAP and GAAP earnings per share is 5.6% of total assets (1998–2001), while Entwistle et al. (2005) show that the mean difference in 2001 is 190% of the relative GAAP earnings. For the largest 500 non-financial UK firms, Choi et al. (2007) show that the average difference between non-GAAP and GAAP EPS is around 7 cents per share, representing an increase of about 54% over the corresponding GAAP EPS. Aubert (2010) studies NYSE-Euronext Paris listed firms and reports a mean increase of about 13% over the equivalent GAAP earnings figure.

With respect to the specific expense items excluded from non-GAAP earnings figures, there is consistent evidence that firms tend to exclude both transitory and recurring items. Bhattacharya et al. (2004) document that the most commonly excluded expense item is depreciation and amortisation (21%), followed by stock-based compensation costs (29%), M&A costs (15%) and R&D costs (7%). Zhang and Zheng (2011) show that 46.3% of non-GAAP earnings releases have intangible amortisation as a non-GAAP adjustment, followed by stock compensation with 37.1%. While Bhattacharya et al. (2004) and Zhang and Zheng (2011) indicate that US firms tend to exclude recurring items from non-GAAP figures, Entwistle et al. (2005) document some conflicting evidence, finding that the most common adjustments in 2001 were ‘business re-organisation costs’, followed by ‘special, one-time, or nonrecurring items’, respectively accounting for 37% and 25% of the adjustments in the US, and 38% and 23% in Canada.

Turning to non-US evidence, Choi et al. (2007) find that adjustments related to non-operating activities comprise almost 100% of the exclusions reported by non-GAAP disclosers. Hitz (2010) reports that restructuring-type expenditures, consolidation/acquisition/divestment and write-offs (impairments) comprise respectively 21.1%, 16.7% and 14.3% of the adjustments made to GAAP earnings. In contrast, Isidro and Marques (2015) study the largest 500 European firms and suggest that adjustments are often items of a recurring nature.

Overall, the empirical evidence suggests that non-GAAP income measures have become an increasingly common part of the global financial reporting landscape. While the propensity of non-GAAP reporting has reduced since

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5. It is noteworthy that South African companies are actually required to disclose ‘headline earnings’ information (i.e., non-GAAP) in their financial statements, which are subject to audit (Venter et al. 2014).
the adoption of Regulation G in the US, there is consistent evidence on the increasing prevalence of non-GAAP disclosures around the world. Non-GAAP disclosures tend to be clustered among certain industries, such as Technology and Manufacturing. The non-GAAP earnings figures are systematically and economically higher than the corresponding GAAP earnings number. Perhaps some concern though, is evidence that non-GAAP measures exclude not only transitory expense items but also recurring items.

REGULATION OF NON-GAAP REPORTING IN AUSTRALIA

The emergence and increasing prevalence of non-GAAP reporting around the world appears to coincide with notable changes in financial reporting requirements and regulations. Accounting standards setters have gradually switched from the use of operating income (i.e., income deemed to be recurrent in the following period) as representative of underlying operational performance to an all-inclusive approach, where net income includes both permanent and transitory earnings, such as one-off costs, gains or losses on sale of assets and unrealised gains or losses. We briefly consider the major regulatory influences on how Australian firms have reported income, and especially the extent to which non-GAAP disclosures have evolved.

In particular, the operating income concept has been widely standardised across the globe since the early 1960s, when it was first required that extraordinary items should be distinguished and reported separately on the income statement. For example, Australian Accounting Standard (AAS) 1, effective from 1 December 1974, distinguished between operating profit, abnormal items and extraordinary items, and required revenues and expenses to be classified as either ordinary items or extraordinary items, the former of which could be further classified into abnormals or operating items before abnormals.

Since then, there has been considerable regulatory concern about the possible misclassification of operating expenses as extraordinary or abnormal items. As a result, restrictions on disclosing and measuring extraordinary and abnormal items have been introduced since the late 1990s. In 1999, AASB 101B Profit and Loss Accounts was reissued as AASB 101B Statement of Financial Performance Effective from the 2000/2001 financial year, this restricted the disclosure of results in the statement of financial performance as being before and after abnormal items.

Further amendments to AASB 101B were undertaken in 2002, which restricted the disclosure and measurement of extraordinary items (i.e., items that reflect transactions that are outside the ordinary activities of the entity and are not of a recurring nature). Extraordinary items were required to be disclosed in the statement of financial performance as a separate line item (AASB 101B para. 4.1). The key change was to the definition of extraordinary items, becoming more restrictive because ‘it is extremely rare for a transaction or other event to give rise to an extraordinary item’ (AASB 101B, para. 5.5.1).

From 1 January 2005, all publicly listed Australian companies have been required to adopt Australian equivalents to International Financial Reporting Standards (A-IFRS). Relatedly, in 2004, a supplementary amendment to AASB 101 Presentation of Financial Statements superseded AASB 101B Statement of Financial Performance. It stated that ‘an entity shall not present any items of income and expense as extraordinary items, either on the face of the income statement or in the notes’ (AASB 101, para. 76). As a result, after the adoption of A-IFRS, Australian reporting entities have been prohibited from separately disclosing either abnormal or extraordinary items. However, in contrast to GAAP requirements, non-GAAP disclosures in Australia are still largely unregulated. The Corporations Act and accounting standards do not prohibit the presentation of non-GAAP information in corporate disclosures. In fact, AASB 133 Earnings per Share, allows the disclosure of non-GAAP information in corporate disclosures. In fact, AASB 133 Earnings per Share, allows the disclosure of non-GAAP information in corporate disclosures. Paragraph 73 of AASB 133 states that a reporting entity can disclose, in addition to basic and diluted EPS, ‘amounts per share using a reported component of the statement of comprehensive income other than one required by this Standard’, and ‘if a component of the statement of comprehensive income is used that is not reported as a line item in the statement of comprehensive income, a reconciliation shall be provided.”

6. See, for example, the discussion of income presentation in IASB (2015).
8. ASIC Surveillance Programs have previously listed AASB 1018 as one of the ten problematic areas in financial reporting.
9. International Accounting Standard 1 (IAS 1 2000) prohibits entities reporting items as extraordinary, stating: ‘An entity shall not present any items of income and expense as extraordinary items, either on the face of the income statement or in the notes’ (para. 85).
10. However, under the reissued AASB 101B, Australian firms can still disclose some of the abnormal items as ‘significant items’, which is the most common term used during that period.
11. AASB 133 Earnings per Share is the Australian equivalent, with some amendments, to IAS 33 Earnings per Share.
Shortly after the adoption of IFRS, the prevalence of non-GAAP disclosures among Australian companies attracted attention from regulators and the professional community. In its Regulation Impact Statement on ‘Disclosing Non-IFRS Financial Information’, ASIC (2011c) suggested that presentation of a manager’s adjusted profit information other than allowed by the standards had become more prevalent after the implementation of IFRS, and went so far as to attribute at least some of this increase to the requirement to include fair value adjustments to assets and liabilities in the statement of comprehensive income.

In 2005, ASIC released Consultation Paper 69 ‘Disclosing Pro Forma Financial Information’ (ASIC, 2005) to set out proposed guidelines for provision of non-GAAP information in financial reports and other documents, as well as discussing what types of non-GAAP information could be published and what additional disclosures should be made so that any such information is not misleading. The Financial Services Institute of Australasia (FINSIA) and the Australian Institute of Company Directors (AICD) jointly issued a policy guidance paper on disclosure of non-GAAP financial measures in March 2009 (AICD/FINSIA, 2009). This non-mandatory guidance endorsed the use of non-GAAP reporting to provide additional information that reflects management’s views on ‘underlying’ profit, while also emphasising the importance of transparency and consistency to ensure non-GAAP information is not false or misleading. The stated intention was to encourage companies to provide additional non-statutory information about underlying profit, to present this additional information in communications to the investment community and to adequately explain adjustments made to what is otherwise the statutory profit.

In 2011, ASIC released Consultation Paper 150 ‘Disclosing Financial Information Other than in Accordance with Accounting Standards’ (CP150–ASIC, 2011a). This was followed by Regulatory Guide 230 ‘Disclosing Non-IFRS Financial Information’ (RG230 – ASIC, 2011b). RG230 provides regulatory guidance on disclosing non-IFRS financial information of which non-IFRS profit (underlying profit or non-statutory profit) information is a sub-set. Major requirements in RG230 focus on the prominence given to non-GAAP earnings, the terminology used by firms (i.e., adoption of ‘underlying profit’ as opposed to other terms such as ‘normalised profit’, ‘result excluding exceptional items’, ‘underlying result’, etc.), disclosure of a detailed reconciliation between GAAP and non-GAAP earnings, and the consistency of adjustments made to GAAP earnings in arriving at the corresponding non-GAAP earnings across other financial periods.

The use of non-GAAP financial information in corporate disclosures is also governed by general statutory obligations, such as requirements that the information not be misleading. In particular, managers are required to comply with the Corporations Act by not disclosing misleading financial information. Therefore, managers are liable for any misleading non-GAAP information included in media releases and/or annual reports. Corporate reporting behaviour is monitored by ASIC so as to maintain a high-quality financial reporting environment. According to the Regulation Impact Statement (ASIC, 2011c), only 2% of the 250 reports from a mixture of ASX top 100 firms and others investigated by ASIC were found to have used non-GAAP profit disclosures in a disruptive manner. However, 58% of the reports were identified as not fully complying with the draft regulatory guide attached to CP150.

It is important to note that non-GAAP financial information is not required to be audited, which potentially dampens assurance on the quality of additional performance metrics provided. However, under ASA/ISA 720 The Auditor’s Responsibilities Relating to Other Information in Documents Containing an Audited Financial Report, auditors have the responsibility to read and verify other information presented in documents containing an audited financial report. When material inconsistencies exist between other information and that disclosed in the audited financial report, auditors are required to make an other matter(s) disclosure.

EVIDENCE ON NON-GAAP REPORTING IN AUSTRALIA

Research on non-GAAP reporting in Australia is relatively limited. Due to the unavailability of machine-readable data on non-GAAP reporting, existing studies typically utilise hand-collected samples with a small number of firms within a short sample period. For example, Cameron et al. (2012) explore the prominence of non-GAAP earnings disclosures and the provision of a reconciliation to the statutory profit for the top 50 Australian non-mining listed companies over 2007–2009. They find that all of these companies disclosed non-GAAP earnings in the narrative sections

12. The Corporations Act 2001 (Cth) establishes that a company director or other officer must exercise their powers and discharge their duties with care and diligence (s. 180).
13. ASA/ISA 720 The Auditor’s Responsibilities Relating to Other Information in Documents Containing an Audited Financial Report establishes requirements and provides application and other explanatory material regarding the auditor’s responsibilities relating to other information in documents containing an audited financial report and the auditor’s report thereon. This:
(a) requires the auditor to read the other information to identify material inconsistencies, if any, with the audited financial report;
(b) requires the auditor to make appropriate arrangements with management to obtain the other information prior to the date of the auditor’s report;
(c) requires the auditor to determine whether the audited financial report or the other information needs to be revised when material inconsistencies are identified; and
(d) describes the auditor’s responsibilities when material inconsistencies are identified.
of their annual reports in 2008 and 2009. Among firms emphasising non-GAAP earnings, the number of firms making net positive adjustments to increase non-GAAP earnings was substantially higher than those making negative adjustments. Most firms reported better performance using non-GAAP earnings, and were more likely to report positive non-GAAP earnings when GAAP earnings were negative. These results suggest that Australian managers may engage in ‘impression management’ by disclosing non-GAAP earnings measures that present the firm’s performance in the best light.

Sek and Taylor (2011) compile a detailed description of the difference between GAAP and non-GAAP earnings for the ‘big four’ Australian banks from 2003 to 2008. They conclude that the definition of non-GAAP earnings is not consistent between banks, nor does it appear to be consistently applied by individual banks over time. They thus raise concerns about the ability of Australian firms to ‘self-define’ financial outcomes. Malone et al. (2012) study the determinants and consequences of non-GAAP earnings disclosures among ASX 200 firms over the period 2008–2010. Consistent with Cameron et al. (2012), they report that non-GAAP earnings provided by firms and financial analysts generally exceeded statutory net profit, and companies were more optimistic in their estimates of non-GAAP earnings than financial analysts. They also find that exclusions from non-GAAP earnings are associated with lower analyst forecast errors in the subsequent period, but are not associated with share prices.

Johnson et al. (2014) conduct an experiment to determine whether the disclosure of non-GAAP earnings significantly affects the information choices of non-sophisticated Australian financial statement users. They suggest that when non-GAAP earnings information is provided, participants tend to select this information rather than GAAP earnings to identify basic measures of profitability. The results indicate that non-GAAP disclosures tend to be incorporated in the information-gathering stage of decision making by non-sophisticated investors.

In the remainder of this section, we provide a detailed descriptive analysis of non-GAAP disclosure in Australia using a comprehensive database of actual non-GAAP disclosures. Prior US-based research typically relies on non-GAAP proxies such as the measure of income reported in analyst forecast services, or at best rely on small sample supplementation of these methods using actual disclosures. In contrast, for the years 2000–2014, we use text search technology available from SIRCA to identify all instances within full-year profit announcements where ASX 500 companies reported non-GAAP earnings measures. The non-GAAP earnings data are hand-collected from firms’ media releases, preliminary financial statements and annual reports using search terms such as ‘cash earnings’, ‘core earnings’, ‘underlying earnings’ and ‘normalised profit’. The final sample consists of 10,601 firm-year observations for the period 2000–2014.

Figure 1 presents the frequency with which companies disclosed at least one non-GAAP metric in their earnings announcements. There is an increasing tendency to report non-GAAP measures over the sample period, with the peak in 2014 of 42%. The highest occurrence prior to 2013 is found in 2009, with 36% of the ASX 500 companies disclosing at least one non-GAAP metric in their earnings announcements. This might be explained by considerable exclusions of asset write-downs in the wake of the global financial crisis that prompted companies to issue non-GAAP metrics in response to unusual economic events. In contrast, only 15% of ASX 500 companies disclosed non-GAAP earnings metrics in 2002, with a slight decline in the years leading up to 2002.

Figure 1 The frequency of ASX 500 listed firms reporting non-GAAP earnings

This figure shows the percentage of the ASX 500 (All Ords) listed firms that disclose at least one non-GAAP metric after tax in their earnings announcements.

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14. For 2007, 48 out of 50 firms reported non-GAAP earnings.
15. We use a simple time trend regression and find a statistically significant t-statistic on our year coefficient of 9.9.
16. This may coincide with an amendment to AASB 1018 Statement of Financial Performance made in June 2002 that required companies to disclose extraordinary items on the face of the income statement as a separate line item. However, this requirement was short-lived, since A-IFRS adopted in 2005 eliminated the mandatory disclosure of extraordinary items.
Figure 2 illustrates the frequency with which companies present reconciliation information detailing the adjustments to statutory earnings made in deriving the non-GAAP number. A steady rise over the sample period is found, particularly in recent years, increasing from around 56% in 2002 to 91% in 2013. The increasing tendency to present reconciliation information is confirmed by a significant time trend over 2000–2014. This result appears to correspond with legislative and regulatory guidance introduced to improve reporting transparency of non-statutory financial information (ASIC, 2005, 2011a, 2011b).

We further divide the sample period into three sub-periods: 2000–2004, 2006–2010, and 2011–2014. We find that the average tendency to disclose a reconciliation in 2006–2010 is significantly higher than that for 2000–2004 (72.85% vs. 60.69%). Reconciliation frequency is found to further increase, with an average of 87.05% in 2011–2014, significantly higher than that for 2006–2010. Therefore, the evidence appears to be consistent with the conjecture that regulatory guidance has been associated with improved transparency in non-GAAP disclosures.

Figure 3 compares the likelihood of ASX 500 companies disclosing non-GAAP earnings metrics across different industries. We classify companies into industries based on two-digit GICS codes. Australian companies in the Utilities industry are found to be most likely to present non-GAAP information, followed by companies in

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17. The t-statistic on our year coefficient is 11.3, statistically significant at the 1% level.
18. We do not include 2005 to avoid the transition effect arising from the adoption of IFRS.
the Consumer Discretionary, Financial and Industrial classifications respectively. On the other hand, ASX 500 companies in the Energy, Materials, Health Care and Telecommunications industries are among those least likely to disclose non-GAAP earnings.

Given the prevalence of non-GAAP reporting among Australian firms, the question naturally arises as to whether non-GAAP earnings generally convey a different view of a firm’s performance compared to the GAAP equivalent. In Figure 4, we focus on this comparison. On average, 52.4% of companies disclose a higher value of non-GAAP earnings than equivalent GAAP earnings. The proportion declines gradually over the period 2002–2007, with the lowest of 38.4% in 2007. It jumped to 56.5% and 64.6% in 2008 and 2009 respectively, largely due to one-off losses recognised in statutory profits during the economic downturn. However, the tendency of reporting higher non-GAAP earnings persists in recent years (ranging from 55–61% over 2010–2014), indicating that an ‘economic downturn’ cannot fully explain such reporting behaviour. A simple time trend regression also indicates that there is some upward trend in the percentage of firms reporting non-GAAP earnings higher than the GAAP equivalent (trend = 0.009; t = 1.80).

Since non-GAAP earnings numbers are mostly derived after excluding several items from statutory earnings, we examine the absolute and relative magnitude of the exclusions from non-GAAP earnings (namely the difference between non-GAAP and GAAP earnings) across years. Figure 5 shows the mean and median of the exclusion amounts. Although the mean amount of exclusions (see Panel A of Figure 5) is substantially higher than the median amount (Panel B), the time-series patterns of both mean and median exclusions are quite consistent. Exclusions over 2008–2014 are consistently higher than for earlier years, with significant amounts of exclusions during the economic downturn. In 2008, the median (mean) exclusion of $16 ($187) million signals the early negative impact of the financial crisis on Australia’s economy. Since most Australian companies end their fiscal year on 30 June, their annual results in 2009 fully reflect the negative impact suffered over the depth of the economic crisis in late 2008, resulting in an increased median (mean) exclusion amount of $31 ($285) million.

19. While 2002 shows an average of $243 million in total exclusions, it reflects the effect of News Corporation with a $13.2 billion write-down. Excluding News Corporation from the sample reduces the average in line with the preceding years.

20. Mining companies overshadowed the rest of the ASX 500 constituents for the year in terms of exclusions. Rio Tinto Limited, whose fiscal calendar ended on 31 December 2008, reported an impairment charge of US$7.6 billion, leading to a net exclusion amount in excess of US$6.6 billion. Fortescue Metals Group Limited reported a net adjustment of AUD$2.6 billion that included a revaluation loss of AUD$2.8 billion to its Leucadia subordinated loan note.

21. News Corporation disclosed more than US$9.2 billion in total exclusions primarily related to a US$8.9 billion impairment charge. The sharp fall in commodity prices during the year led BHP Billiton Limited to announce the suspension of its Ravensthorpe nickel operation and other mining projects, resulting in exceptional costs of USD4.8 billion.
In contrast, the median exclusion during the post-crisis period of 2010–2014 is around $15 million.

Figure 6 demonstrates the relative magnitude of total exclusions as a percentage of the absolute value of GAAP earnings. On average, exclusions are about 31% of the amount of GAAP earnings. The highest percentage of exclusions occurs in 2009, with an average of 75% of statutory earnings. Statistical tests reveal that there is no clear time trend for the absolute magnitude of exclusions.

To provide further insights into the difference between GAAP earnings and non-GAAP earnings, Figure 7 presents the distributions of changes in GAAP earnings and changes in non-GAAP earnings for ASX 500 companies over 2000–2014. We find that the frequency of changes in

**FIGURE 6** THE ABSOLUTE VALUE OF NON-GAAP EXCLUSIONS IN RELATION TO THE EQUIVALENT GAAP EARNINGS RESULT

This figure shows the mean and median absolute value of exclusions as a percentage of the equivalent GAAP earnings result.

**Panel A:** The mean percentage of the absolute value of exclusions in relation to GAAP earnings ($millions)

**Panel B:** The median percentage of the absolute value of exclusions in relation to GAAP earnings ($millions)

**FIGURE 7** THE DISTRIBUTION OF CHANGES IN GAAP EARNINGS AND CHANGES IN NON-GAAP EARNINGS FOR ASX 500 LISTED FIRMS

This figure shows the frequency of firms in different intervals of changes in GAAP earnings and changes in non-GAAP earnings. GaapEearn_change (NGearn_change) is the change in GAAP EPS (non-GAAP EPS) from the previous period to the current period.
non-GAAP EPS in the interval of \([-0.05, 0.05]\) is significantly higher than for changes in GAAP EPS, suggesting that non-GAAP EPS is a more persistent and predictable measure than GAAP EPS. Moreover, the frequency of non-GAAP earnings falling outside the interval of \([-0.3, 0.3]\) is significantly lower than that for GAAP earnings (i.e., there are fewer extreme values). Overall, the results indicate that non-GAAP earnings are less volatile and more predictable than their GAAP equivalent. This is consistent with non-GAAP earnings frequently excluding the effects of large unrealised profits or alternately the effects of large asset impairments that otherwise form part of the calculation of the GAAP equivalent.

While the data presented above indicates the significance of the adjustments made in deriving non-GAAP earnings, it is unclear whether such adjustments depend on the sign of GAAP earnings figures. Figure 8 reveals that 11.1% of firm-years included in the sample disclosed a non-GAAP profit when the GAAP equivalent was a loss. In contrast, there are virtually no examples (0.4% of the sample) of firms reporting a non-GAAP loss when the GAAP equivalent was a profit. A simple time trend regression fails to identify any clear time trend in this reporting behaviour.

Figure 9 illustrates the frequency of various non-GAAP terms utilised in earnings announcements. The usage of ‘underlying profit’ (or any related terms to describe earnings) increases substantially over time. The likelihood of using the ‘underlying’ term increases from 15.1% in 2000 to 56.1% in 2013, with similar upward trends observed for both pre-tax and after-tax ‘underlying’ terms. A simple time trend regression confirms a significant time trend in using the term ‘underlying profits’ or similar (trend = 0.025; \(t = 22.68\)). On the other hand, an average of 3.4% of companies used the term ‘cash earnings’ or similar. However, Figure 9 also indicates considerable variation in the usage of non-GAAP terms, since other terms (e.g., operating profit, adjusted results, normalised earnings) still accounted for a sizeable proportion of observations at the end of our sample period.

**FIGURE 8** THE FREQUENCY WITH WHICH FIRMS DISCLOSE NON-GAAP EARNINGS WITH AN OPPOSITE SIGN TO THE GAAP EQUIVALENT

Panel A: Percentage of non-GAAP reporters that disclose a non-GAAP earnings profit at the same time as a GAAP loss.

Panel B: Percentage of non-GAAP reporters that disclose a non-GAAP loss at the same time as a GAAP profit.

**FIGURE 9** TERMINOLOGY USED BY NON-GAAP REPORTERS

This figure summarises the terminology used by the non-GAAP reporters. Note that there is only one observation per firm-year.
Finally, Figure 10 summarises the search process used to identify non-GAAP earnings disclosures. Media releases and others are found to be the most prevalent medium of initial non-GAAP earnings disclosure, followed by the preliminary financial statements. Very few firms first report a non-GAAP earnings disclosure when the annual report is released, consistent with an intention to place ‘early’ focus on the non-GAAP result.

Overall, the above analyses for ASX 500 companies from 2000–2014 suggest that non-GAAP reporting is a common yet growing phenomenon in Australia, particularly after the implementation of IFRS. We find a significant upward trend in the frequency of firms reporting non-GAAP figures, the percentage of non-GAAP disclosers providing detailed reconciliation information, the percentage of firms disclosing non-GAAP earnings that exceed the corresponding GAAP result, and the usage of the ‘underlying profit’ term over time. On average, non-GAAP earnings figures are higher than their GAAP equivalent, with an economically significant absolute and relative amount of adjustments (i.e., exclusions) to GAAP earnings. Non-GAAP earnings figures may convey a different view of a firm’s performance, since companies are more likely to disclose a profit using non-GAAP earnings when GAAP earnings indicate a loss, rather than reporting a loss as the non-GAAP result. Finally, there is evidence that non-GAAP earnings are more predictable and less volatile than their GAAP equivalents.

Although our data suggest that non-GAAP earnings measures are presented on a selective basis in relation to the company’s profitability, the results should be interpreted with caution because the possibility cannot be ruled out that non-GAAP disclosure enables managers to communicate operational performance effectively to financial statement users, especially during economic downturns or unusual economic events. We leave the answer to this question for future research.

FIGURE 10 SOURCE DOCUMENTS WHERE NON-GAAP EARNINGS ARE IDENTIFIED

This figure summarises the source documents used to identify non-GAAP disclosures. Priority was given to media releases (as it is common practice for firms to first release the financial year earnings using this source), followed by preliminary financial statements and annual reports. Each firm-year search would stop as soon as a non-GAAP earnings figure was identified.
Evidence on motives for non-GAAP reporting

OPPORTUNISTIC MOTIVES FOR NON-GAAP REPORTING: EARNINGS MANAGEMENT AND BENCHMARK BEATING

Due to the separation of management and control, managers may have incentives to engage in earnings management so as to maximise personal utility and extract self-benefits, usually at the expense of shareholders and other stakeholders. In addition, firms meeting or beating earnings benchmarks and/or analysts’ forecasts are rewarded with higher returns and stock prices (e.g., Kasznik and McNichols, 2002; Fischer et al., 2014). However, earnings management, especially through accrual-based transactions, is largely constrained by the underlying accounting relation presumed in financial statements and will be reversed in future periods. In addition, accrual-based earnings management is susceptible to the scrutiny of auditors and regulators. Therefore, the disclosure of additional earnings metrics other than GAAP earnings in the press release (i.e., non-GAAP metrics) can be used as an alternative tool for earnings management. Table 3 summarises the US-based evidence on opportunistic motives for non-GAAP reporting, the key findings of which are discussed below (see Appendix – Table 3).

Using a sample of non-GAAP disclosures in actual press releases from Newswire and Business Wire on Lexis-Nexis, Bhattacharya et al. (2003) report consistent evidence that managers use non-GAAP earnings as a tool for beating strategic earnings benchmarks. They find that non-GAAP earnings tend to exceed GAAP earnings. Moreover, while most non-GAAP earnings meet or beat analyst forecasts, GAAP earnings beat analysts’ forecasts less than 50% of the time. Bhattacharya et al. (2004) use a similar sample and find that 13% of firms in the sample use non-GAAP reporting to convert a GAAP loss into a non-GAAP profit, 41% make use of non-GAAP earnings to meet or beat analysts’ forecasts and 35% of the firms in the sample use non-GAAP disclosures to avoid reporting a decrease in earnings compared to the previous period.

Doyle et al. (2013) further suggest the use of non-GAAP exclusions as an additional tool to meet analysts’ expectations incremental to the other well-documented earnings management tools (accrual-based management, real activities management and expectations management). They find that managers use non-GAAP exclusions as substitutes for both accrual-based management and real activities management via operating cash flows. Non-GAAP exclusions are more likely when accrual-based earnings management is highly constrained by the firm’s balance sheet or subject to high expected costs.

Recent studies attempt to provide more direct evidence and examine exclusion items that distinguish non-GAAP earnings from GAAP earnings. Using a large sample of hand-collected non-GAAP earnings data, Black and Christensen (2009) document that managers frequently exclude items that are not ‘one-off’ in nature, since three of the most frequently-used exclusions are recurring items, namely research and development expenses, depreciation and amortisation, and share-based compensation. In fact, these adjustments are significantly associated with firms’ ability to achieve strategic earnings benchmarks that they would otherwise have missed based on GAAP earnings. Hsu and Kross (2011) study special items included (excluded from) analysts’ earnings forecasts (sometimes referred to as ‘street earnings’) and demonstrate that the decision depends on the consequences of inclusion (exclusion) that would increase street earnings, smooth the earnings series, or meet or beat earnings benchmarks. They conclude that the results imply managers include and/or exclude special items in an opportunistic manner to mask lower earnings and to smooth earnings patterns.
Barth et al. (2012) examine the differences between analysts’ and managers’ reasons for such exclusions, specifically focusing on SFAS 123R’s requirement that firms recognise share-based compensation expense. They find that incentives to increase earnings, meet earnings benchmarks and smooth earnings explain non-GAAP exclusions of share-based compensation expense, but the exclusions have no predictive power for the firm’s future performance (as measured by GAAP earnings).

Brown et al. (2012b) examine the influence of investor sentiment on voluntary disclosures of non-GAAP information and suggest that the association between investor sentiment and non-GAAP disclosure is at least partly attributable to opportunistic motives. They find that as the level of investor sentiment increases, managers are more likely to disclose non-GAAP earnings figures that exceed GAAP earnings, exclude higher levels of both recurring and nonrecurring expense items from GAAP earnings to derive non-GAAP figures, and place non-GAAP earnings numbers more prominently within the press release.22

Conversely, Brown et al. (2012a) explore the timing of quarterly earnings announcements with non-GAAP earnings releases. They find that when non-GAAP earnings are disclosed within the earnings press release, the timing of quarterly earnings announcements is accelerated. They also find that acceleration increases with the extent to which recurring items are excluded, as well as the use of less transparent reconciliation formats.

Overall, this literature provides some evidence that non-GAAP reporting can be used to mislead rather than inform investors. Prior studies have found evidence of non-GAAP figures being used to beat strategic earnings benchmarks, such as positive earnings (i.e., avoiding reporting a loss) or beating analysts’ forecasts and/or the previous period’s result (e.g., Bhattacharya et al., 2004; Black and Christensen, 2009). There is also some evidence that managers remove items with predictive ability, suggesting they are not transient items (Bhattacharya et al., 2003). Doyle et al. also note three additional problems with the use of non-GAAP earnings across years and between firms (Bradshaw and Sloan, 2002; Bhattacharya et al., 2004).

INFORMATIVE MOTIVES FOR NON-GAAP REPORTING

There is considerable debate with respect to whether non-GAAP earnings metrics provide incremental information to the market and/or are more relevant for valuation. To test this argument, prior research typically assesses the value relevance of non-GAAP earnings figures (either adjusted and reported by management or provided by analyst estimate tracking services such as I/B/E/S and Thomson Datastream) in three ways: the ability of earnings and non-GAAP exclusion adjustments to predict future earnings, stock returns or analyst forecast revisions (i.e., tests of predictability), the association between abnormal stock returns around earnings announcements and earnings surprises (i.e., tests of information content), and the association between earnings levels and contemporary stock prices (i.e., tests of relevance for valuation). Table 4 summarises several of these studies (see Appendix – Table 4).

Bradshaw and Sloan (2002) are among the first to present large sample evidence on the economic significance of differences between GAAP earnings and street earnings. They document that long-window stock returns are more highly associated with forecast errors based on street earnings than GAAP-based forecast errors, consistent with the view that either investors are misled by street earnings or exclusion items from street earnings are transitory without any implications for future performance. For a random sample of 50 earnings announcements per quarter, they also find that managers emphasise street earnings earlier than GAAP earnings within quarterly earnings press releases. This is consistent with managers proactively promoting the use of street earnings.

While studies using street earnings as proxies for non-GAAP earnings provide important insights, the extent to which street earnings approximate the non-GAAP figures actually reported by managers in press releases is unclear, because the majority of firms that are covered by these forecast tracking services do not report pro forma numbers (Bhattacharya et al., 2003). Bhattacharya et al. also note three additional problems with the use of street earnings as a proxy for non-GAAP disclosures.

First, firms disclosing non-GAAP earnings tend to be clustered in the Services and High-technology industries, and frequently report losses in GAAP earnings. Second, items excluded to derive non-GAAP earnings are found to be inconsistent across firms, as well as over time.

22. Brown et al. (2012b) also present and examine a managerial sentiment view of non-GAAP disclosures. They argue that, during optimistic (pessimistic) periods, sentiment-driven managers could choose to disclose non-GAAP earnings figures as a reflection of their own overly optimistic (pessimistic) perceptions of the firm’s underlying performance, even if such disclosures are not driven by either information or opportunistic motives. Brown et al. find that the likelihood of reporting non-GAAP earnings figures is positively associated with the degree of managerial sentiment, suggesting that managerial sentiment plays a role in voluntary non-GAAP disclosures. However, there is no evidence that managerial sentiment is associated with aggressive exclusions in non-GAAP earnings.
Third, routine expenses such as depreciation and amortisation and stock-based compensation tend to be the most common types of exclusions.\footnote{On the other hand, Christensen (2007) indicates that conversations with Thomson Financial regarding the I/B/E/S database indicate they do check press releases to ascertain if a manager-disclosed adjusted number is present. Differences between this number and the street earnings are then carefully checked to determine which number is finally included in the database.}

Abarbanell and Lehavy (2007) re-examine the robustness and consistency of evidence in the prior literature, indicating that market reactions to earnings announcements are more highly correlated with street earnings than GAAP earnings. They suggest that empirical support for this conclusion is attributable to the extreme negative observations of the earnings difference distribution (i.e., instances where street earnings greatly exceed GAAP earnings), in conjunction with a regime shift in the early 1990s whereby commercial forecast data providers began adjusting actual street earnings to exclude items not forecasted by financial analysts (Cohen et al., 2007).

Bradshaw (2003) and Cohen et al. (2007) identify another source of measurement error in tests of the value relevance of non-GAAP earnings and street earnings due to the unavailability of a comparable GAAP earnings expectation. Prior studies using street earnings forecasts as a proxy for GAAP earnings expectations are likely to report results biased in favour of the informativeness of street earnings, and that of non-GAAP earnings to a lesser extent. To quantify such measurement error, Bradshaw et al. (2014) utilise a newly available dataset with GAAP earnings forecasts by financial analysts. They find that GAAP earnings surprises used in the previous literature are on average comprised of 55% measurement error, and the measurement error biases the GAAP earnings response coefficient downward by 12%, along with the corresponding explanatory power for returns. Notably, after correcting measurement error, Bradshaw et al. (2014) confirm that both non-GAAP earnings and street earnings are more informative to investors than GAAP earnings.

Given concerns about the use of street earnings as a proxy for non-GAAP earnings disclosure, some studies have used hand-collected, manager-disclosed non-GAAP earnings figures. Bhattacharya et al. (2003) study a large sample of actual non-GAAP press releases to assess the relative informativeness of non-GAAP earnings (and street earnings) vis-à-vis GAAP earnings. Their results indicate that non-GAAP-based forecast errors are more highly correlated to abnormal returns around earnings announcement dates and analyst forecast revisions than the equivalent GAAP earnings, as are street-based forecast errors. In addition, Bhattacharya et al. evaluate the relative informativeness of non-GAAP earnings and street earnings, and find that non-GAAP earnings are less informative to investors, having lower explanatory power for abnormal returns around earnings announcements. In contrast, Entwistle et al. (2010) find that non-GAAP earnings have more information content and a more significant valuation role than street earnings.

Several studies using other data resources also confirm the superior informativeness of non-GAAP earnings figures. For example, Brown and Sivakumar (2003) argue that comparisons of the value relevance of GAAP earnings with non-GAAP earnings unduly favour non-GAAP earnings, because GAAP earnings include many non-operating and one-off items that by definition reduce value relevance. They thus assess the relative value relevance of non-GAAP earnings, street earnings and an operating earnings measure reported by Standard and Poor’s, which is derived from firms’ financial statements after excluding non-operating items. Their results confirm that non-GAAP earnings contain value-relevant information beyond that of operating earnings.

Choi et al. (2007) use a sample of non-GAAP disclosures in the UK from 1993 to 2001, and identify disagreement between management and Thomson Datastream over the adjustment items of earnings components. The use of Thomson Datastream facilitates item-by-item reconciliation from street earnings to GAAP earnings, which is not feasible using I/B/E/S. Comparing the relative value and forecasting relevance of management adjustments and street adjustments by Thomson, their results indicate that items excluded from earnings by management, but not by Thomson, are not value-relevant. This suggests that managers exclude additional one-off earnings components overlooked by Thomson. On the other hand, items included by management but not by Thomson are incrementally value-relevant, indicating managers correctly identify and keep recurring earnings components misclassified by Thomson as transitory.

Since it is likely that both informative and opportunistic motives influence non-GAAP disclosure, research has focused on identifying instances where these contrasting motives for non-GAAP reporting have different empirical predictions. For example, Lougee and Marquardt (2004) find that non-GAAP earnings numbers have incremental...
information content when the informativeness of GAAP earnings is low or when strategic disclosure considerations are absent (i.e., when GAAP earnings are lower than the benchmarks). However, tests on the predictability of non-GAAP earnings for future earnings and returns show mixed evidence in these two scenarios.

Curtis et al. (2014) focus on a setting where GAAP earnings contain transitory gains to assess whether the primary motive of non-GAAP disclosure is to inform or to mislead. To inform investors of permanent earnings, managers would exclude the transitory gain and report a lower value for non-GAAP earnings than the GAAP equivalent. In contrast, managers with opportunistic motives would emphasise GAAP earnings and obscure the transitory gain. They conclude that the information motive is the dominant reason for non-GAAP disclosures in the presence of transitory gains within GAAP earnings.

In summary, the literature discussed above (and summarised in Table 4) generally supports the view that non-GAAP disclosures are incrementally informative relative to their GAAP equivalents. However, tests based on street earnings supplied by analyst forecast services suffer from biases arising from extreme values in the sample distribution and structural changes in the way analyst forecast services formulate and adjust the data. On the other hand, tests of the information content of non-GAAP disclosures suffer from measurement errors that bias the results in favour of street or non-GAAP earnings. Recent research that examines instances where the information and opportunistic motives can be separated empirically provides further support for the information motive.

THE ROLE OF INTERNAL GOVERNANCE, EXECUTIVE COMPENSATION AND EXTERNAL AUDITORS

An extensive body of accounting research considers how contracting and political aspects influence management’s motives when making accounting choices (Watts and Zimmerman, 1986). Agency theory suggests the use of performance-based compensation contracts to align the interests of insiders and outsiders (e.g., Jensen and Murphy, 1990). Performance-based compensation can encourage managers to maximise the net expected economic value to shareholders, but can also create opportunistic incentives to manage earnings figures (Armstrong and Vashistha, 2012). While compensation contracts are not usually tied to non-GAAP earnings figures, non-GAAP exclusions can be used as an additional tool besides other earnings management techniques to increase performance-based pay (Doyle et al., 2013).

Research on the properties of non-GAAP earnings disclosures and compensation contracts is relatively limited. Table 5 presents a summary of the studies discussed below (see Appendix – Table 5). Isidro and Marques (2010) study the 500 largest European firms over 2003–2005 and report a positive association between performance-based compensation and managers’ propensity to engage in aggressive non-GAAP reporting, as evidenced by emphasising non-GAAP figures in the title of the press release, making more adjustments for recurring items, and avoiding disclosure of a reconciliation to GAAP earnings equivalents. Grey et al. (2013) examine a sample of UK firms from 2001 to 2003 (i.e., before the implementation of IFRS) and find evidence that companies tend to report alternative EPS metrics when the executive share option scheme is tied to EPS growth.

However, different components of a compensation package may have diverse effects on managerial incentives. Black et al. (2014) explore compensation incentives and non-GAAP disclosures by distinguishing long-term performance-based compensation plans from bonus plans with a short-term focus. While both types of compensation plans are found to be associated with a higher incidence of reporting non-GAAP earnings figures, long-term compensation plans are found to curtail the likelihood of aggressive non-GAAP reporting.

Recent regulatory changes in relation to executive compensation, such as clawback provisions, may lead to unintended consequences in the presence of non-GAAP reporting. Clawback provisions allow a firm to recover incentive-based compensation from its executive officers on the occurrence of some predefined event (e.g., an earnings misstatement). For US firms, the adoption of clawback provisions became mandatory upon enactment of the Dodd-Frank Act. However, although Chen et al. (2012) document improved financial reporting quality of GAAP earnings after the voluntary adoption of clawback provisions, Kyung et al. (2013) find that the adoption of clawback provisions is also associated with an increase in the frequency of non-GAAP earnings disclosures and a deterioration in the quality of non-GAAP exclusions.

Corporate governance mechanisms are designed to reduce agency costs and organisational inefficiencies arising from moral hazard and adverse selection. Accordingly, effective governance mechanisms reduce information asymmetry and restrict opportunistic behaviour such as aggressive non-GAAP exclusions. To the extent that non-GAAP earnings numbers are disclosed for information purposes, firms with effective corporate governance are expected to increase the frequency and quality of non-GAAP information disclosure.

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Empirical evidence appears to support these arguments. Frankel et al. (2011) find that firms with fewer independent directors are more likely to engage in opportunistic exclusions of recurring items from non-GAAP earnings. Jennings and Marques (2011) study the joint effect of the SEC intervention (Regulation G being effective in March, 2003) and corporate governance on non-GAAP disclosures. They report that, prior to the SEC intervention, effective corporate governance (i.e., board independence and institutional ownership) protects investors from misleading non-GAAP adjustments, but investors tend to be misled by adjustments made by firms with weak corporate governance. However, the effect of corporate governance diminishes entirely after the SEC intervention, consistent with corporate governance mechanisms and regulatory requirements being substitutes.

In addition to corporate governance mechanisms, external audit can play a critical role in preventing firms engaging in misleading financial reporting. Acting as monitors, auditors give reasonable assurance to the market that accounting information provided within the financial statements gives a ‘true and fair’ view of a firm’s performance (Becker et al., 1998; Francis et al., 1999). Although auditors generally are not responsible for auditing non-GAAP disclosures (Chen et al., 2012), under the provision of SAS 8, auditors are required to review voluntary disclosures such as non-GAAP reporting and to prevent any overly optimistic or misleading information from being released to investors. Thus, auditors could still be concerned when opportunistic motives underlie the provision of non-GAAP earnings results, due to potential litigation and reputation risks.

However, the empirical evidence is mixed. Chen et al. (2012) find opportunistic non-GAAP disclosures are significantly associated with higher audit fees and a higher probability of auditor resignations, especially in the period before the Sarbanes-Oxley Act (SOX). In contrast, Black et al. (2014) show that audit effort (proxied by higher-than-normal audit fees) is negatively correlated with the likelihood of managers engaging in aggressive non-GAAP reporting, consistent with the auditor’s role as a possible deterrent of aggressive non-GAAP reporting.

To sum up, there is some evidence that performance-based compensation plans create opportunistic motives for non-GAAP disclosures, especially when compensation plans have a short-term focus. However, corporate governance mechanisms (e.g., more independent boards, higher institutional ownership and higher auditor effort) are found to be possible deterrents of opportunistic non-GAAP reporting.

PERCEPTIONS OF MARKET PARTICIPANTS AND NON-GAAP DISCLOSURES

Since empirical evidence lends support to both the information and opportunism motives for disclosing non-GAAP performance measures, a central question is whether these measures influence investors (sophisticated or otherwise) and/or other information intermediaries such as financial analysts. Table 6 summarises several studies addressing these questions (see Appendix – Table 6).

Doyle et al. (2003) document that investors under-react to the lower future cash flow implications of street earnings. In particular, one dollar of GAAP expenses excluded from street earnings (i.e., exclusions other than special items) predicts 3.328 fewer dollars of future operating cash flows over the next three years, suggesting that such exclusions are in fact recurring items. More importantly, a hedge portfolio taking a long position in firms with the lowest decile of exclusions and shorting firms with the highest exclusions yields a significantly positive abnormal return of 29.9% over the three years subsequent to the earnings announcement. While Landsman et al. (2007) adopt a quite different research design, their findings generally confirm those of Doyle et al., except that they find investors over-react to positive exclusions other than special items, and stocks with such exclusions tend to be overpriced.

Chen (2010) and Hsu and Kross (2011) attempt to examine investors’ perceptions of non-GAAP disclosures in settings where there are strong motives for managers to disclose opportunistically. Chen (2010) documents evidence that investors underestimate the persistence of expense items that are included in GAAP earnings but excluded from street earnings to allow firms to meet or beat analysts’ forecasts, especially in the period before the introduction of Regulation G. In contrast, there is little evidence that financial analysts underestimate the persistence of such exclusions. Hsu and Kross (2011) examine instances where managers strategically include or exclude special items in street earnings. They find that special items included in street earnings are positively associated with three-day abnormal returns around earnings announcements, but special items excluded from street earnings are not. In addition, special items included in street earnings are negatively related to future stock returns, but there is no relationship between future returns and excluded special items. These results suggest that investors overprice included special items around earnings announcements, which is subsequently corrected in later periods, but excluded special items are appropriately priced.
However, since there is considerable evidence that street earnings differ from non-GAAP earnings, the extent to which the studies discussed above facilitate drawing conclusions about the motives for non-GAAP disclosures is unclear (Easton, 2003). In fact, Bhattacharya et al. (2003) find that investors tend to over-react to non-GAAP profits when the GAAP result is a loss, but under-react (or attach less weight) to non-GAAP earnings announcements that beat analysts’ forecasts when the GAAP earnings do not. Financial analysts appear to understand strategic disclosures of non-GAAP earnings to beat analyst earnings forecasts and attach less weight to the disclosure of a non-GAAP profit when the equivalent GAAP figure is a loss.

Instead of examining stock prices and/or stock returns, Bhattacharya et al. (2007) and Christensen et al. (2014) endeavour to provide insights into the debate via evidence of investor trading behaviour. Bhattacharya et al. (2007) suggest that if managers deliberately disclose optimistic earnings results, individual investors with less investment knowledge and wealth are most likely to be misled. Their study utilises intraday data to examine transactions around earnings announcements, which include non-GAAP disclosures. They report that individual investors’ abnormal trading during earnings announcements is significantly positively related to the magnitude and direction of the earnings surprise based on non-GAAP earnings, but there is no relation between sophisticated investors’ trading behaviours and non-GAAP information. The results support their conjecture that the segment of the market that relies on non-GAAP information is populated predominately by less sophisticated individual investors. Christensen et al. (2014) investigate the trading behaviour of short sellers around earnings announcements that include a non-GAAP disclosure. They find a significant abnormal increase in short sales, suggesting that short sellers exploit information asymmetries created by non-GAAP disclosures.

Existing studies also identify several instances where investors’ perception of non-GAAP disclosures or market pricing varies. Lougee and Marquardt (2004) find that investors tend to ignore (i.e., attach less weight to) non-GAAP earnings around earnings announcement dates when prior non-GAAP earnings informativeness is high, or when GAAP earnings are less than expected. Hsu and Kross (2011) show that market mispricing is most prominent when managers suddenly include special items as part of street earnings. Christensen et al. (2014) document that short sellers take greater short positions when the non-GAAP exclusions are more aggressive (i.e., excluding recurring items such as depreciation and share-based compensation).

Prior studies examining judgement and decision making also provide useful insights on how less-sophisticated individual investors process non-GAAP information differently from sophisticated investors. Frederickson and Miller (2004) conduct an experiment that requires participants to develop stock price assessments in response to an earnings press release. They find that when non-GAAP earnings exceed GAAP earnings, less-sophisticated and non-professional investors (i.e., MBAs) receiving a press release including a non-GAAP earnings figure assess a higher stock price than non-professional investors who receive the standard ‘GAAP only’ disclosures. However, judgements by more sophisticated investors (i.e., financial analysts) are not affected by non-GAAP disclosures. These results indicate non-GAAP disclosures affect non-professional investors’ assessments through unintended cognitive effects, where the mere presence of non-GAAP information, regardless of its relevance to decision making and judgement, affects investors’ information processing. However, Anderson and Hellman (2007) find that the presence of non-GAAP disclosures does affect financial analysts’ judgements and argue that the results are attributable to positive framing and a higher level of anchoring.
Elliott (2006) extends Frederickson and Miller (2004) by focusing on two underlying characteristics of non-GAAP disclosures, namely the emphasis of non-GAAP earnings and the presence of a quantitative reconciliation. The results suggest that it is the emphasis management places on non-GAAP earnings figures, rather than the mere presence of non-GAAP disclosures, that affects non-professional investors’ judgements. This is attributed to cognitive effects such as over-weighting salient information and is largely mitigated by the presence of a reconciliation. While emphasis of non-GAAP disclosures does not affect professional investors’ judgements, the presence of a reconciliation increases financial analysts’ reliance on non-GAAP information and leads them to view non-GAAP information as more reliable.

Allee et al. (2007) complement experimental results such as those described above by using intraday transaction data to construct trade size-based proxies for investor sophistication. Consistent with Frederickson and Miller (2004), they find that the existence of non-GAAP disclosures influences the trading behaviour of non-professional investors, while professional investors trade less or even in the opposite direction to that indicated by the earnings surprise. Similar to Elliott (2006), the experimental results also suggest that the strategic emphasis of non-GAAP information influences non-professional investors’ judgements. In contrast, they find the relative placement of non-GAAP earnings versus GAAP earnings has no impact on professional investors.

Collectively, archival and experimental results provide relatively robust evidence on the effects of non-GAAP disclosures and managers’ emphasis of non-GAAP earnings figures on non-professional investors’ judgements and decisions. Investors tend to over-react to non-GAAP profits or the included one-off items in non-GAAP earnings, particularly when the equivalent GAAP result is a loss or managers emphasise non-GAAP information. On the other hand, professional investors such as financial analysts and short-sellers appear to understand the strategic disclosure of non-GAAP earnings figures. In addition, experimental studies indicate that non-GAAP disclosures affect non-professional investors’ assessments through unintended cognitive effects, as the information processing of non-professional investors is affected by the presence of non-GAAP information (Frederickson and Miller, 2004) or the emphasis placed on non-GAAP disclosures (Elliott, 2006). Judgements of financial analysts are seemingly not affected by the presence of, or emphasis on, non-GAAP information, but non-GAAP information is considered more reliable in the presence of a reconciliation with the GAAP equivalent.

**REGULATION AND NON-GAAP REPORTING**

Non-GAAP reporting has attracted regulators’ concerns. In light of the Enron and WorldCom scandals and other accounting frauds in the US, the SEC issued ‘Cautionary Advice’ regarding the use of non-GAAP financial information in earnings releases in December 2001, arguing that non-GAAP figures with ‘no defined meaning and no uniform characteristics’ could ‘mislead investors if it obscures GAAP results’ and would also violate the anti-fraud provisions of existing securities laws (SEC, 2001). Subsequently, Regulation G, directed by the SOX of 2002 (s. 401(b)), was approved in January 2003 and enacted on 28 March, 2003. Under Regulation G, companies making non-GAAP earnings disclosures are required to present the most directly comparable GAAP financial results along with a reconciliation of the non-GAAP figure with the GAAP equivalent.

More recently, the SEC has expressed concern that the previous guidance on Regulation G was more restrictive than the original intention of Regulation G, possibly precluding companies from providing meaningful information in financial statements. In January 2010, the SEC Division of Corporate Finance issued Compliance & Disclosure Interpretations (C&DIs) about non-GAAP financial measures that update and replace the previous guidance. The objectives of the new C&DIs, as indicated by Wayne Carnall, the Chief Accountant in the Division, were to (i) eliminate any actual or perceived restrictions in the FAQs on the disclosure of non-GAAP information that were not consistent with the actual rules; (ii) clarify the SEC’s interpretations; and (iii) centralise in one location the SEC’s interpretations. However, Mr Carnall also stated that SEC staff were not encouraging the disclosure of non-GAAP information or requiring firms to include non-GAAP information in SEC filings if non-GAAP figures are used elsewhere.

US-based studies typically use the issuance of ‘Cautionary Advice’ in 2001, the adoption of Regulation G in 2003, and/or the issuance of C&DIs in 2010 to examine how the use, calculation, presentation and market perceptions of non-GAAP earnings figures have changed in response to regulatory change(s). There is consistent evidence that the propensity of companies to disclose non-GAAP figures declines after Regulation G, as indicated from the studies summarised in Table 7 (see Appendix – Table 7).
Entwistle et al. (2006) document that the likelihood of reporting non-GAAP earnings declined from 77% of S&P 500 firms in 2001 to 54% in 2003. Similar results are also reported by Marques (2006) and Heflin and Hsu (2008). Marques (2006) investigates two interventions (the warning in December 2001 and Regulation G) and shows that the probability of disclosing non-GAAP earnings was stable in 2001 and 2002 (i.e., after the issuance of ‘Cautionary Advice’), but decreased significantly after the approval of Regulation G. On the other hand, Kyung (2014) documents that firms are 2.2% more likely to have disclosed non-GAAP earnings after the issuance of the 2010 C&DIs compared to the pre-C&DIs period, suggesting that the new C&DIs were associated with an increase in non-GAAP disclosures. Existing studies also find that non-GAAP earnings are disclosed in a less biased manner after Regulation G. After the adoption of Regulation G, Entwistle et al. (2006) find a substantial reduction in the proportion of firms reporting a higher value of non-GAAP earnings relative to GAAP earnings, and a sharp decline in the average difference between the non-GAAP earnings and the GAAP equivalent. Heflin and Hsu (2008) also document a decline in the magnitude of this difference, and a modest decline in the propensity of non-GAAP earnings to meet or beat analysts’ forecasts.

Chen (2010) examines the exclusions from street earnings used to meet or beat analysts’ forecasts (MBF exclusions), since MBF exclusions are found to be more persistent than other exclusions. He finds that the difference in persistence between MBF exclusions and non-MBF exclusions reduced after Regulation G, suggesting that there were fewer recurring items in MBF exclusions after Regulation G. Kolev et al. (2008) examine the quality of non-GAAP exclusions (i.e., their transitory nature) and show that exclusion quality improved following the SEC interventions. Using a similar approach as Kolev et al. (2008), Kyung (2014) reports that non-GAAP exclusions are of higher quality after the issuance of the new C&DIs, suggesting that Regulation G may have precluded some improvement in non-GAAP earnings quality.

The reconciliation requirement of Regulation G is largely supported by experimental studies (e.g., Elliott, 2006) that suggest the cognitive bias introduced by emphasising non-GAAP earnings can be largely mitigated by the presence of a reconciliation. Zhang and Zheng (2011) study the impact of reconciliations on the mispricing of non-GAAP earnings and show that:

1. mispricing of non-GAAP earnings only exists in firms with low reconciliation quality rather than firms with high quality.
2. while mispricing of non-GAAP earnings is found in firms with low reconciliation quality prior to Regulation G, there is no evidence of mispricing after the regulation;
3. there is a reduction in mispricing when firms improve reconciliation quality across Regulation G.

The results in Zhang and Zheng (2011) thus support the SEC’s claim that reconciliations lead to more accurate security pricing, and suggest that the introduction of Regulation G curbed mispricing, at least to some degree.

Firms have also been found to decrease the degree of emphasis on non-GAAP earnings after the SEC interventions, confirming the effectiveness of SEC regulation. Bowen et al. (2005) find that managers decrease (increase) the level of emphasis on non-GAAP (GAAP) figures subsequent to the SEC ‘Cautionary Advice’ in December 2001, and this effect is more pronounced in firms with greater exposure to media coverage. Entwistle et al. (2006b) report that, after the adoption of Regulation G, non-GAAP disclosures are presented in a much less prominent manner in press releases. There are 44% fewer firms reporting non-GAAP earnings in the press release headline, while 77% fewer firms discuss non-GAAP figures in a manner that dominates GAAP figures in the full press release. Entwistle et al. (2006b) investigate the propensity of firms to structure their press releases using potentially misleading language (e.g., using the term ‘net income’ to represent non-GAAP earnings in the headline). They find that, prior to Regulation G, over 10% of S&P 500 firms used such misleading language. Following implementation of Regulation G, this percentage reduced to less than 1% of S&P 500 firms. Kyung (2014) also finds the frequency of using non-GAAP numbers to beat analysts’ forecasts is lower in the post-C&DIs period.

In terms of market perceptions, Marques (2006) finds a positive abnormal return around earnings announcements when non-GAAP figures are reported after Regulation G, but there is no reaction before the regulation. In contrast to the pre-regulation period, the market reacts positively to the exclusions made by I/B/E/S analysts after the

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24. Kolev et al. (2008) show that, prior to SEC intervention, $1 of exclusions is associated with 55 cents of expenses over the next four quarters, and the association reduces to only 24 cents after the SEC intervention. They conclude that while exclusions are still not perfectly transitory in the post-regulation period, SEC intervention appears to have had the desired effect of mitigating the opportunistic use of non-GAAP earnings numbers.
SEC intervention, while the reaction is not significant for additional non-GAAP exclusions made by management. Chen (2010) documents strong (weak) evidence that investors underestimate the persistence of exclusions from street earnings in the pre- (post-) regulation period, while there is little evidence indicating any underestimation by financial analysts in either period. Black et al. (2012) show that investors rely more on non-GAAP disclosures in the post-SOX period, but they also appear to discount at least some potentially misleading non-GAAP information to a greater extent than in the pre-SOX period.

While the effectiveness of the SEC interventions is well-documented in the literature, prior studies also present empirical evidence suggesting potential unintended regulatory consequences. Heflin and Hsu (2008) find that the regulations have led to reduced non-GAAP disclosures even when firms experience special items, with a decrease in investor weight on earnings forecast errors. Kolev et al. (2008) document evidence that the quality of special items has decreased following SEC regulation, indicating that firms may adapt to the new disclosure environment and shift recurring items into special items.

However, given the evidence that many companies simply abandoned non-GAAP disclosures after Regulation G, studies measuring regulatory impact potentially suffer from self-selection bias, since firms with high-quality non-GAAP disclosures are more likely to have continued the practice. Baik et al. (2008) and Fortin et al. (2008) exploit a unique setting (the real estate investment trust (REIT) industry), where the non-GAAP reporting of Funds from Operations (FFO) had been in existence for more than a decade, in a rule-based self-regulatory environment. While Fortin et al (2008) find no evidence of a reduction in the frequency of non-GAAP reporting after Regulation G, they find that in the post-regulation period:

1. firms in the REIT industry are more likely to follow industry guidance in defining FFO;
2. exclusions from FFO have become more transitory; and
3. firms are less likely to opportunistically define FFO to beat analysts’ forecasts.

Baik et al. (2008) show that industry guidance can affect non-GAAP disclosures. The results show that the release of industry guidance is associated with a significant decrease in the frequency of using FFO to avoid loss reporting or to beat analysts’ forecasts and an increase in the information content of FFO, particularly for firms providing a reconciliation. Hence, the results in Baik et al. (2008) and Fortin et al. (2008) support the role of industry guidance in monitoring and influencing non-GAAP disclosures.

Apart from US-based evidence, Walker and Louvari (2003) examine UK firms, where the introduction of FRS 3 allowed companies to report additional EPS measures with the objective of providing more useful information about companies’ financial performance. They find that the regulatory change triggered both opportunistic and informative behaviours in non-GAAP disclosures. Firms with a higher level of disclosure are more likely to disclose non-GAAP measures, but there is a positive association between the frequency of non-GAAP disclosures and the propensity of these measures to exceed their GAAP equivalent. Malone et al. (2012) examine non-GAAP disclosures among Australian firms in the presence of IFRS re-measurements (related to financial instruments, impairment and revaluation of investment property, and agricultural, pension and insurance assets) and non-recurring items. They find that Australian firms with a higher incidence of re-measurements and one-off items are more likely to disclose non-GAAP figures, and these non-GAAP disclosures are associated with lower analyst forecast errors in the subsequent period.

In summary, prior studies provide strong evidence of effects associated with regulatory intervention. After the introduction of Regulation G by the SEC, the frequency of non-GAAP disclosures significantly declined. The presentation of non-GAAP income measures also changed. The SEC interventions are also associated with improved perceptions of non-GAAP disclosures by market participants and appear to have resulted in more accurate security pricing, especially after the provision of a reconciliation between non-GAAP measures and their GAAP equivalent. There is also some evidence that industry guidance has played an important role in influencing non-GAAP disclosures.
Conclusions

The role of accounting standards in promoting consistent measurement and recognition of similar economic transactions is well understood. Such uniformity is fundamental to ensuring meaningful cross-sectional and temporal comparisons of financial performance and position. Yet over the last decade, there has been a substantial rise in the frequency with which firms report, and at times appear to emphasise, definitions of financial performance that do not strictly comply with definitions of performance contained in accounting standards. Not surprisingly, this practice has received the attention of professional organisations as well as regulators. However, while relatively explicit legislation has been enacted in some countries to address the reporting of non-GAAP income measures (e.g., Regulation G in the US), this practice has remained largely unregulated in countries such as Australia.

The absence of explicit regulation provides the opportunity to identify how, when and why firms elect to report their results other than in compliance with GAAP, as well as some of the consequences. Such evidence can guide assessment of the need for regulation of non-GAAP reporting specifically, as well as the broader question of how desirable it is to have flexibility in the regulations that govern the provision of periodic financial reporting. Perhaps, most importantly, the ability to observe divergence in the development of financial reporting requirements (especially accounting standards) and voluntarily adopted reporting practices facilitates a ‘bottom up’ approach to identifying the most appropriate definitions of periodic income, a marked contrast with the ‘top down’ approach under which income has seemingly been increasingly derived from the change in corresponding balance sheets. This monograph contributes towards our understanding of these issues by carefully documenting the evolution of Australian reporting practices over the period 2000–2014, as well as providing a comprehensive review of extant empirical research.

The Australian evidence we provide, although largely descriptive, yields a number of important insights. The frequency of non-GAAP reporting has risen over time, but so has the likelihood that a reconciliation with the GAAP equivalent will be provided. Although there is evidence that the non-GAAP result exceeds its GAAP equivalent more frequently than otherwise, the difference is not as large as some anecdotes would suggest. In other words, non-GAAP income measures are not overwhelmingly just a more favourable result than the GAAP equivalent. However, there is some evidence that the likelihood of a non-GAAP measure exceeding its GAAP equivalent has increased over time. We also show that non-GAAP measures have substantially smaller variation from year to year, and there are less extreme annual variations than for GAAP earnings results. These results are consistent with non-GAAP earnings being less volatile than their GAAP equivalent, and consequently easier to forecast. Finally, we also observe a strong convergence towards the use of terms such as ‘underlying profit’ or ‘underlying earnings’ as the main description of non-GAAP earnings figures.

Turning to extant (largely US-based) research, we identify two contrasting motives underlying non-GAAP reporting. One is opportunism on the part of boards and/or management, while the other is focused on the provision of useful information for stakeholders not otherwise available from statutory financial reporting measures. First, there is considerable evidence that non-GAAP disclosures are used
opportunistically to provide a more favourable picture of periodic performance by beating strategic performance benchmarks. Exclusions from non-GAAP earnings are found to have predictive ability for future performance, indicating that at least some of these items are not transitory. However, there is also support for the information role of non-GAAP reporting, especially from studies that examine the value relevance of non-GAAP earnings numbers disclosed by both management and analyst forecast services.

Internal governance mechanisms such as board independence and the presence of institutional shareholders are found to be possible deterrents of opportunistic non-GAAP disclosure. Performance-based compensation plans with a short-term focus may create incentives for opportunistic reporting of relatively favourable measures. While external auditors by definition are not responsible for non-GAAP disclosures in the financial statements and/or in the press release, opportunistic non-GAAP reporting has been found to be associated with audit fees and auditor resignations, suggesting that auditors could be concerned with risks arising from aggressive non-GAAP reporting.

Tests of market reaction and market efficiency suggest that non-professional individual investors cannot fully understand the information contained in non-GAAP disclosures and particularly the implication of the exclusion items from non-GAAP figures. However, investors’ reactions to non-GAAP information depends on its presentation (e.g., its prominence compared to GAAP earnings), the firm’s broader information environment and the quality of related non-GAAP disclosures, as well as the underlying performance of the firm. In contrast, there is little evidence that professional investors, such as financial analysts and short-sellers, are misled by non-GAAP disclosures as evidenced by analysts’ forecast revisions and short-seller trading. These findings from archival research are also supported by experimental studies. In addition, experimental research suggests that the presence and relative emphasis of non-GAAP information only increases non-professional investors’ favourable assessment through unintended cognitive effects (e.g., overweighting salient information). Such effects can be largely mitigated by the provision of a clear reconciliation with the equivalent GAAP result.

US-based studies have also provided important insights into the regulation of non-GAAP disclosures and generally support the effectiveness of the multiple SEC interventions that have occurred over the last 15 years. After the adoption of Regulation G, non-GAAP disclosures among US firms are found to be less prevalent, less biased towards more favourable outcomes relative to their GAAP equivalent and less prominent in press releases. The requirement to provide a reconciliation between non-GAAP disclosures and their GAAP equivalent has been shown to improve investors’ perception of non-GAAP information and reduce market mispricing. There is also some evidence that industry guidance can complement accounting regulations.

In summary, prior research on the circumstances associated with the production and dissemination of non-GAAP earnings measures (including measures of market reaction) yields mixed evidence as to the likely motives for their production. While several studies lend support to a somewhat cynical view of non-GAAP reporting as being a method for selectively reporting a better result than is evident from underlying GAAP figures, there is also significant empirical support for the view that managers...
are addressing deficiencies in GAAP in providing this information. While extant research cannot unambiguously distinguish between these two non-mutually exclusive explanations, there is consistent evidence that financial reporting regulations can play a role in influencing non-GAAP disclosures.

Finally, we observe that the interaction between non-GAAP disclosures and internal and external corporate governance mechanisms remains largely unexplored. Besides using non-GAAP disclosures as an alternative performance measure directed at external stakeholders (irrespective of the motive), there is also some anecdotal evidence that non-GAAP figures sometimes are used as the basis for determining some part of CEO compensation (e.g., annual bonuses). The rise in non-GAAP reporting and the use of such metrics in CEO compensation contracts contrasts with the shift from the income statement focus to the balance sheet focus that underlies the evolution of accounting standards, and raises concerns about the design of efficient compensation contracts. It also represents a significant challenge to accounting standard setters and more broadly, regulators of financial markets.
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### SUMMARY OF PRELIMINARY EVIDENCE ON NON-GAAP DISCLOSURES IN THE US

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<tr>
<th>AUTHOR (YEAR)</th>
<th>SAMPLE/SOURCES</th>
<th>SAMPLE COUNTRY/PERIOD</th>
<th>FREQUENCY OF NON-GAAP DISCLOSURE</th>
<th>DIFFERENCE BETWEEN NON-GAAP AND GAAP</th>
<th>ADJUSTMENT ITEMS</th>
<th>INFORMATIVE OR OPPORTUNISTIC?</th>
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<tr>
<td>Bhattacharya et al. (2004)</td>
<td>No starting basis. Actual press releases from <em>Newswire</em> and <em>Business Wire</em> on Lexis-Nexis.</td>
<td>US, 1,149 quarterly pro forma press releases over 1998–2000.</td>
<td>A high concentration among certain industries: 49.9% in business services (esp. technology-related services), 30.7% in manufacturing. From 1998 to 2000 there was a 417% increase in pro forma reporting (from 47 to 243).</td>
<td>Average GAAP EPS is a net loss of 14.7 cents, while average pro forma EPS is a net income of 8.5 cents.</td>
<td>The most commonly excluded expense item is depreciation and amortisation, 21% of all adjustments (410 out of 1,984), followed by stock-based compensation costs (291), M&amp;A costs (142) and R&amp;D costs (133). Excepting the gain and loss on sales of assets, all the pro forma adjustments have an income-increasing effect. Adjustment items not consistent across years.</td>
<td>Supports opportunistic. 13% of the pro forma announcements turned a GAAP loss into a non-GAAP profit, and over 41% converted a GAAP EPS below analysts’ forecasts to a non-GAAP figure meeting or beating analysts’ forecasts. Firms reporting non-GAAP earnings tend to have poorer fundamentals and performance than their industry peers, supports that firms could be acting strategically to meet or beat analysts’ forecasts.</td>
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<td>Kolev et al. (2008)</td>
<td>No starting basis. Preliminary History Quarterly Compustat File (financial information) and I/B/E/S Split-Unadjusted File (proxy for non-GAAP earnings).</td>
<td>US, 10,4954 firm-quarter observations over 1998–2004.</td>
<td>6,135 firms were classified as non-GAAP reporters (non-zero exclusions sample).</td>
<td>For the main sample, the mean (median) magnitude difference between non-GAAP and GAAP earnings per share is 0.039 (0.020) for the full sample, and 0.134 (0.08) for the non-zero exclusion sample.</td>
<td>For the full sample, mean total exclusions were 0.039, being 0.025 from special items and 0.014 from other exclusions. For the non-zero exclusion sample, the mean is 0.134, 0.088 and 0.046 respectively.</td>
<td>Supports opportunistic. Results suggest that SOX implementation impacted non-GAAP reporting by reducing the magnitude of the adjustments, especially for other exclusions (0.017 pre-SOX vs. 0.013 post-SOX). Lower quality of special items in the post-SOX period suggests firms may have shifted the exclusions of recurring expenses to special items.</td>
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<tr>
<td>Black et al. (2012)</td>
<td>No starting basis. Actual press release from <em>Newswire</em> and <em>Business Wire</em> on Lexis-Nexis. Financial information from CRSP and Compustat. Analyst earnings forecast from I/B/E/S.</td>
<td>US, 9,663 quarterly earnings announcement over 2,386 firms from 1998 to 2006.</td>
<td>Frequency of non-GAAP disclosure increases from around 50 to 420 quarterly earnings announcement over the sample period.</td>
<td>N/A</td>
<td>In the pre-SOX period, 79% of the firms excluded recurring items against 78% in the post-SOX period.</td>
<td>Supports opportunistic. The frequency of firms using non-GAAP earnings as a benchmark beating tool decreases from 37% in the pre-SOX period to 30% in the post-SOX period. Although, frequency of firms excluding recurring items had decreased by only 1% (79% vs. 78%).</td>
</tr>
<tr>
<td>Author (Year)</td>
<td>Sample/Sources</td>
<td>Sample Country/Period</td>
<td>Frequency of Non-GAAP Disclosure</td>
<td>Difference Between Non-GAAP and GAAP</td>
<td>Adjustment Items</td>
<td>Informative or Opportunistic?</td>
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<td>Zhang and Zheng (2011)</td>
<td>No starting basis. Actual press releases from Newswire and Business Wire on Lexis-Nexis. Compustat (financial information).</td>
<td>US, 2,934 actual press releases from 1,147 firms over 1998–2001.</td>
<td>Frequency of non-GAAP disclosure increased from 282 to 1,623 over the sample period (1998–2001). 84% of the non-GAAP reporters are firms listed on the NASDAQ. High-tech firms comprise 59.10% of the non-GAAP reporter sample.</td>
<td>The mean magnitude difference between non-GAAP and GAAP EPS is 5.6% of total assets.</td>
<td>46.3% of the earnings release has intangible amortisation as a non-GAAP adjustment, followed by stock compensation with 37.1%.</td>
<td>Supports opportunistic/informative conditional on reconciliation quality. Results suggest that mispricing exists prior to Regulation G only for firms with low reconciliation quality. After Regulation G, results show that non-GAAP earnings are no longer mispriced.</td>
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<tr>
<td>Whipple (2015)</td>
<td>I/B/E/S unadjusted detail history files (proxy for non-GAAP). CRSP and Compustat for financial information. Thomson One and EDGAR (analyst research report).</td>
<td>US, 44,089 firm-quarters over 2003–2011.</td>
<td>Frequency of non-GAAP reporting (firms where I/B/E/S EPS differs from GAAP EPS) fluctuates between 48% in 2003 to around 42% in 2011.</td>
<td>The mean magnitude difference between non-GAAP and GAAP is 0.051 per share. On average, non-GAAP is higher than GAAP.</td>
<td>On average, non-GAAP earnings exclude 0.026 cents of transitory items (income-decreasing) and 0.023 cents of recurring items (income-decreasing). 34% are related to stock compensation and 33% related to amortisation and depreciation.</td>
<td>Supports informative. Evidence indicates that exclusions of recurring items are of informative nature. Firstly, they are non-cash items on average. In addition, they are excluded from analysts' non-GAAP forecasts, and the market assesses these items to be less value-relevant.</td>
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46.3% of the earnings release has intangible amortisation as a non-GAAP adjustment, followed by stock compensation with 37.1%. Supports opportunistic/informative conditional on reconciliation quality. Results suggest that mispricing exists prior to Regulation G only for firms with low reconciliation quality. After Regulation G, results show that non-GAAP earnings are no longer mispriced. Supports informative. Evidence indicates that exclusions of recurring items are of informative nature. Firstly, they are non-cash items on average. In addition, they are excluded from analysts' non-GAAP forecasts, and the market assesses these items to be less value-relevant.
### APPENDIX – TABLE 2  SUMMARY OF PRELIMINARY EVIDENCE ON NON-GAAP DISCLOSURES IN COUNTRIES OUTSIDE THE US

<table>
<thead>
<tr>
<th>AUTHOR (YEAR)</th>
<th>SAMPLE/SOURCES</th>
<th>SAMPLE COUNTRY/PERIOD</th>
<th>FREQUENCY OF NON-GAAP DISCLOSURE</th>
<th>DIFFERENCE BETWEEN NON-GAAP AND GAAP</th>
<th>ADJUSTMENT ITEMS</th>
<th>INFORMATIVE OR OPPORTUNISTIC?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walker and Louvari (2003)</td>
<td>Random sample from London Stock Exchange. Annual reports from PENCOM CD-ROM. EPS from FT Eext or Datastream.</td>
<td>UK, 2,37 firms actual press releases for the 1996 year.</td>
<td>38% of the sample disclosed at least one non-GAAP earnings metric.</td>
<td>N/A</td>
<td>39 out of the 90 non-GAAP disclosures used the terminology earnings before all exceptional items. The paper does not characterise the nature of the adjustments in detail.</td>
<td>Supports informative. The study finds strong evidence supporting firms with high level of disclosure are more likely to disclose alternate EPS measures. In addition, firms tend to report non-GAAP EPS when the same exceeds the relative GAAP EPS.</td>
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<tr>
<td>Entwistle et al. (2005)</td>
<td>Standard and Poor’s (S&amp;P) 500 in the US and Toronto Stock Exchange (TSX) S&amp;P 300 in Canada.</td>
<td>494 US firms and 290 Canadian firms comprising a total of 784 actual press releases over a one-year period (2001–2001).</td>
<td>77% of US firms reported non-GAAP earnings whilst only 42% of the Canadian firms exhibited the same behaviour.</td>
<td>The mean magnitude difference between non-GAAP and GAAP earnings in the US is 190% of the relative GAAP earnings ($0.85), and 89% (0.50) for Canada.</td>
<td>For both US and Canada, the adjustments are very similar in nature. The most common adjustments are ‘business re-organisation costs’, followed by ‘special, one-time, or nonrecurring items’, accounting for 37% and 25%, respectively, of the adjustments in the US, and 38% and 23% in Canada.</td>
<td>Supports opportunistic. US managers tend to report more pro forma earnings, place greater emphasis on pro forma than GAAP earnings, and make more income-increasing adjustments to GAAP earnings, with a larger magnitude, than Canadian managers.</td>
</tr>
<tr>
<td>Choi et al. (2007)</td>
<td>500 largest London Stock Exchange listed non-financial firms. Thomson Datastream and I/B/E/S for financial information.</td>
<td>UK, 1,500 firm-years across three different periods (1994, 1996 and 2001).</td>
<td>In 1994, 39% of the sample disclosed a non-GAAP EPS, increasing to 53% in 1996, and 76% in 2001.</td>
<td>The mean magnitude difference between non-GAAP and GAAP EPS is around 7 pence, representing an increase of about 54% over the relative GAAP EPS.</td>
<td>Adjustments related to non-operating activities (comprises almost 100% of the exclusions reported by the non-GAAP disclosers).</td>
<td>Supports informative. Adjustments related to non-operating activities (comprises almost 100% of the exclusions reported by the non-GAAP disclosers). Findings suggest that adjustments are in general transitory in nature, although some evidence related to the classification of transitory gains may suggest opportunistic behaviour. The mean magnitude difference between non-GAAP and GAAP EPS is around 7 pence, representing an increase of about 54% over the relative GAAP EPS. Results from future operating cash flows and stock price that managers are better at identifying the nature of the expenses (transitory vs. recurrent) than Thomson Datastream.</td>
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<td>Aubert (2010)</td>
<td>NYSE-Euronext Paris listed firms. Actual press releases extracted from Factiva database.</td>
<td>France, 116 non-GAAP earnings announcement over 1996–2006.</td>
<td>The mean magnitude percentage difference between non-GAAP and GAAP earnings is about 12.6%.</td>
<td>Firms report 'Net profit before goodwill amortisation' as a non-GAAP measure 39% of the time, followed by 'Net profit excluding extraordinary items' representing 16.4% of the sample.</td>
<td>Supports informative and opportunistic. Results suggest that non-GAAP earnings are more value-relevant than the relative GAAP earnings. On the flip side, additional evidence supports the opportunistic view where managers tend to use non-GAAP disclosure as a benchmark-beating tool (89.4% of the non-GAAP disclosures).</td>
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<tr>
<td>Hitz (2010)</td>
<td>Listed firms on the Frankfurt Stock Exchange, DAX (30 largest) and MDAX (50 second largest) indices. Actual press releases.</td>
<td>Germany, 566 quarterly earnings release over 2005–2006.</td>
<td>The frequency of reporting at least one metric on the earnings release is around 86% for EB (earnings before) metrics, while for ‘pure’ non-GAAP metrics the frequency is 35.5% of the total sample.</td>
<td>Restructuring-type expenditures, consolidation/acquisition/divestment and write-offs (impairments) comprise respectively, 21.1%, 16.7% and 14.3% of the adjustments made to GAAP earnings. 73.1% of the adjustments made have an income-increasing effect.</td>
<td>Supports opportunistic. Results from emphasis (EB and non-GAAP earnings are emphasised over GAAP earnings in the press release) and transparency of the adjustments (only 32.7% of the firms provide full reconciliation between GAAP and non-GAAP earnings) indicate that managers are using non-GAAP disclosures for strategic reporting.</td>
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<tr>
<td>Venter et al. (2014)</td>
<td>Firms listed on the main board of JSE. McGregor BFA database.</td>
<td>South Africa, 2,042 firm-years from 424 firms over 2002–2009.</td>
<td>Mandatory non-GAAP earnings (headline earnings) disclosure alongside GAAP earnings in the press release.</td>
<td>The mean (median) magnitude difference between non-GAAP and GAAP earnings is −12.9 million (1.2 million).</td>
<td>Adjustments are nil in 17% of the observations and negative in 46% of the observations. Although the adjustments on average increase GAAP earnings, non-GAAP earnings are higher than GAAP earnings in the majority of the observations.</td>
<td>Supports informative. Altogether, the results are consistent with findings from the US and around other institutional settings, where non-GAAP earnings are found to be more value-relevant than GAAP earnings.</td>
</tr>
<tr>
<td>Aubert and Grudnitski (2014)</td>
<td>EURO STOXX Fixed Index (FactSet database). Hand-collected actual press releases from companies' websites.</td>
<td>Europe (12 Eurozone countries), 989 disclosures from 314 firms over 2008–2011.</td>
<td>Non-GAAP disclosures in Europe grew from 1,331 to 2,249 disclosures (out of 5,896 surviving firms). Out of the 989 firms in the sample Finance and Producer Manufacturing are the two major industry sectors, comprising 18.40% and 9% respectively.</td>
<td>The mean magnitude difference between non-GAAP and GAAP earnings is 0.0062 (EPS scaled by lagged fiscal year-end stock price).</td>
<td>Supports informative and opportunistic depending on the reconciliation quality. Where companies provide low-quality reconciliation between GAAP and non-GAAP earnings, non-GAAP earnings is correlated with future abnormal returns. Such mispricing is mitigated in the presence of high quality reconciliation.</td>
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</tbody>
</table>
**APPENDIX – TABLE 2** SUMMARY OF PRELIMINARY EVIDENCE ON NON-GAAP DISCLOSURES IN COUNTRIES OUTSIDE THE US (continued)

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<tr>
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<tbody>
<tr>
<td>Rainsbury et al. (2012)</td>
<td>NZT Top 50 Index. Hand-collected data from the annual reports.</td>
<td>New Zealand, 320 firm-years over 2004–2011.</td>
<td>Frequency of non-GAAP reporting by firms in NZ increased from 10% in 2004 to 40% in 2011.</td>
<td>The percentage of firms reporting non-GAAP earnings higher than GAAP earnings increased from 50% to 68.8% over the sample period (2004–2011).</td>
<td>Most of the adjustments made were non-tax-related and varied from four adjustments in 2004 to 30 adjustments in 2011. Across all adjustments (tax and non-tax-related) there was an increase from one to 2.625 adjustments per firm over the sample period (2004–2011).</td>
<td>Supports opportunistic. Results weakly indicate use of non-GAAP reporting to mislead the market. There was an overall increase in the number of companies reporting non-GAAP over the sample period, and additional investigation suggests that IFRS implementation contributes to this phenomenon.</td>
</tr>
<tr>
<td>Isidro and Marques (2015)</td>
<td>Financial Times 2006 classification of the 500 largest European companies. Actual press releases from companies’ websites, Regulatory News Service, Newswire and Business Wire. Compustat (financial information). Financial information from Datastream. Analyst data from IBES. Additional sources for extra country indicators.</td>
<td>Europe, 1,301 press releases from 316 firms over 2003–2007.</td>
<td>Non-GAAP earnings disclosures were present in 79.5% of the earnings announcement (60.8% of these were non-GAAP EPS). Only 30.3% of the firms were consistently reporting non-GAAP earnings over the sample period (2003–2007).</td>
<td>72.3% of the firms reported non-GAAP earnings higher than GAAP earnings.</td>
<td>Adjustments were found to be of a recurring nature and within R&amp;D, amortisation, stock-based compensation and tax expenses.</td>
<td>Supports opportunistic. Overall, firms miss analysts’ consensus benchmark for GAAP earnings (non-GAAP earnings) in 48% (19%) of the observations. The same trend occurs for last year’s earnings benchmark and to turn GAAP loss into a non-GAAP profit, 13.5% and 6.5% of the cases respectively. In addition, firms located in countries with high law enforcement and other strong institutional and economic factors are more likely to make use of non-GAAP reporting as a benchmark-beating tool.</td>
</tr>
<tr>
<td>Choi and Young (2015)</td>
<td>500 largest non-financial firms listed in the London Stock Exchange. Hand-collected data from published financial statements. Forecast data from IBES and financial data from Datastream.</td>
<td>UK, 3914 firm-years from 727 firms for 1993, 1994, 1996 and 2001 calendar years.</td>
<td>57% of the firms disclose a non-GAAP EPS on the face of the income statement, and 81% of the firms disclose a non-GAAP EPS at least once over the sample period. The frequency of firms reporting non-GAAP EPS increases from 41% in 1993 to 73% in 2001.</td>
<td>The mean (median) magnitude difference between non-GAAP EPS and GAAP EPS is 3 cents (1 cent).</td>
<td>Evidence shows that non-GAAP reporters tend to exclude transitory items (transitory gains and losses) in an attempt to provide a better measure of core earnings.</td>
<td>Supports opportunistic and informative. Non-GAAP reporters failed to meet GAAP EPS consensus forecast in 61% of the cases against only 35% of GAAP-only reporters. These results are consistent with managers using non-GAAP reporting as a benchmark-beating tool. On the flip side, additional evidence also shows managers’ intention to provide a better measure of core earnings by excluding items deemed to be transitory in nature.</td>
</tr>
</tbody>
</table>
## APPENDIX – TABLE 3  SUMMARY OF THE LITERATURE ON OPPORTUNISTIC MOTIVES FOR NON-GAAP DISCLOSURES

<table>
<thead>
<tr>
<th>AUTHOR (YEAR)</th>
<th>SAMPLE/SOURCES</th>
<th>NON-GAAP AND/ OR GAAP MEASURES</th>
<th>KEY TEST VARIABLES</th>
<th>FINDINGS</th>
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<tr>
<td>Bhattacharya et al. (2003)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis, 1,149 firm-quarters over 1998–2000. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Forecast errors for non-GAAP, street and GAAP earnings respectively, as the difference between the actual minus the forecasted earnings.</td>
<td>Abnormal returns around earnings announcement, one-quarter-ahead revisions in analysts’ earnings forecasts.</td>
<td>Some evidence could corroborate the opportunistic view. Specifically, about 80% of non-GAAP earnings releases meet or beat the analyst forecast, while the same only happens in 39% of GAAP operating earnings cases. Although, results from the forecast errors show that investors do not discount non-GAAP earnings in these instances, they tend to find non-GAAP earnings more informative. Results from REVISION show the I/B/E/S earnings are slightly more persistent than non-GAAP and GAAP earnings. Overall, the findings support the informative hypothesis. Results from the forecast errors.</td>
</tr>
<tr>
<td>Bhattacharya et al. (2004)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis, 1,149 firm-quarters over 1998–2000. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Actual non-GAAP earnings extracted from firms’ press releases. Street earnings from I/B/E/S.</td>
<td>Various types of adjustments for which the firm disclosed the magnitude of the adjustment, and frequency of various types of adjustments over the sample period.</td>
<td>Supports opportunistic. 13% of the pro forma announcements turned a GAAP loss into a non-GAAP profit, and over 41% converted a GAAP EPS below analyst forecast to a non-GAAP figure meeting or beating analysts’ forecasts. Firms reporting non-GAAP earnings tend to have poorer fundamentals and performance than their industry peers, supports that firms could be acting strategically to meet or beat analysts’ forecasts.</td>
</tr>
<tr>
<td>Black and Christensen (2009)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis, 5,674 firm-quarters from 1,894 firms over 1998–2003. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Managers’ exclusions of recurring items non-GAAP EPS, I/B/E/S Actual EPS and Compustat Operating EPS. Special items and below the line items from Compustat Operating EPS, EPS before extraordinary items and diluted EPS.</td>
<td>MGREXClTOTAL (managers’ total above the line exclusions)/ PROFIT/CONSENSUS/ Infrequent items/ Recurring items/ TAXCHG.</td>
<td>Supports opportunistic. Results show that when a firm excludes only one item, it is likely to be stock-related expenses (STOCKCHG). One frequent item (MERGER) is often used to meet a benchmark. As for recurring items, managers mainly exclude R&amp;D, DEPRAMORT, INTEXP and TAXCHG to convert a GAAP loss to a non-GAAP profit. In sum, the combination of adjustments of recurring items and benchmark-beating are indicative of opportunistic behaviour.</td>
</tr>
<tr>
<td>Hsu and Kross (2011)</td>
<td>Street earnings obtained from I/B/E/S. Compustat (quarterly) for accounting and financial data. Final sample of 234,461 firm-quarter observations.</td>
<td>Street earnings as proxy for non-GAAP earnings, and EPS from continuing operations as GAAP earnings. Special items on after-tax basis as the difference between quarterly EPS from continuing operations and quarterly after-tax operating income.</td>
<td>Persistence of special items for future earnings, determinants of the inclusion/exclusion of special items (announcement period returns and future returns), and market pricing of special items.</td>
<td>Supports opportunistic. Results show that managers tend to include special items in street earnings when the same assists income smoothing. Also, positive special items are preferred inclusions in street earnings, especially if when used as a benchmark-beating tool (to avoid loss or meeting the same earnings from the relative previous period). For instance, where special items are negative, managers avoid their inclusion in street earnings. Further results find that included special items are overpriced during the announcement period.</td>
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</table>
### APPENDIX – TABLE 3  SUMMARY OF THE LITERATURE ON OPPORTUNISTIC MOTIVES FOR NON-GAAP DISCLOSURES (continued)

<table>
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<tr>
<th>Author (Year)</th>
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<th>Key Test Variables</th>
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<tr>
<td><strong>Barth et al. (2012)</strong></td>
<td>Non-GAAP earnings from SEC’s website, ‘street excluders’ as those firms from Bear Steams US Equity Research, analysts’ earnings forecast from I/B/E/S, financial and accounting data from CRSP and Compustat. Final sample of 1,845 firms from 2005 for opportunism tests. For predictive ability tests, 8,406 firm-year observations from 1998 to 2005.</td>
<td>Stock-based compensation expense, actual earnings per I/B/E/S minus the last consensus earnings forecast before the firm’s fiscal year-end, and standard deviation of a firm’s stock-based compensation expense across sample years.</td>
<td>EX (likelihood of exclusion of stock-based compensation expense) and EARN_{t+1} (future earnings).</td>
<td>Supports opportunistic. Results show that firms with larger expenses, which beat prior year’s analyst forecast and avoid a loss, are more likely to exclude stock-based compensation from non-GAAP earnings. The same occurs for firms with historical higher volatility of stock-based compensation expense. With regards to street earnings, exclusion of stock-based compensation, there is a degree of disagreement among individual analysts whether to exclude or include stock-based compensation expense. Underlying motives could be partly considered self-serving. For the predictive tests, non-GAAP earnings and street earnings have opposite results. Non-GAAP earnings that include stock-based compensation expense have higher predictive ability for future earnings. However, street earnings that exclude stock-based compensation expense have higher predictive ability for future earnings.</td>
</tr>
<tr>
<td><strong>Brown et al. (2012b, JAR)</strong></td>
<td>Non-GAAP earnings from actual press releases from Newswise and Business Wire on Lexis-Nexis, 36,672 quarterly earnings press releases from 1,954 firms over 1998–2005. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>GAAP-diluted EPS from operations, analyst-adjusted street EPS from the I/B/E/S split-unadjusted actual file and hand-collected non-GAAP-diluted EPS from quarterly earnings press releases.</td>
<td>SENTIMENT and MGR_EXC_{TOTAL}, (difference between EPS_{PROFORMA} and GAAP-diluted EPS after extraordinary items), MGR_EXC_{REC}, MGR_EXC_{RECUR}, NGE, CONSENSUS, PROFIT.</td>
<td>Supports opportunistic. First, results show that the coefficient on SENTIMENT is positively correlated to the likelihood of disclosing non-GAAP earnings magnitude of total exclusions, recurring and incremental recurring exclusions. Non-GAAP earnings are also given prominence on the earnings press releases as the level of investor sentiment increases. Lastly, results also evidence managerial use of non-GAAP reporting as a benchmark-beating tool, while GAAP earnings fail to meet analysts’ forecasts.</td>
</tr>
<tr>
<td><strong>Brown et al. (2012a, JBFA)</strong></td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis, 8,127 quarterly earnings press releases from 2,134 firms over 1998–2006. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Forecast error (FE) as the difference between the mean (consensus) analyst forecast from the actual earnings metric. Dummy variable NEG_FE equals one if GAAP EPS is below or misses analysts’ forecast, and zero otherwise. Dummy variable GAAP_{LOSS} equals one if GAAP EPS is a loss, and zero otherwise.</td>
<td>Timing of the earnings announcement (DELAY), managers’ recurring and nonrecurring exclusions (TOTAL_EXC), and reconciliations transparency (LOW_RECON).</td>
<td>Supports opportunistic. Results on timing of earnings announcements suggest that managers release earnings earlier when they disclose a non-GAAP earnings metric, especially when the same reflect good news. Non-GAAP earnings surprise is also positively associated with acceleration of earnings announcement. With respect to exclusions, for early disclosers, $1 of recurring exclusions is associated with $1.36 of expenses over the next four quarters. Combined with the evidence that non-recurring exclusions are predictive of future earnings, results suggest managerial opportunism on the timing of non-GAAP earnings announcement.</td>
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<td>Doyle et al. (2013)</td>
<td>Street earnings as a proxy for non-GAAP earnings from I/B/E/S. Other financial and accounting data sourced from CRSP and Compustat. Final sample of 143,462 firm-quarters over 1988–1999.</td>
<td>Cash flow from operations and cash flow from operations less capital expenditure. Total exclusions as the difference between non-GAAP EPS (street earnings) and GAAP EPS.</td>
<td>Future cash flow/Marke-adjusted stock return.</td>
<td>Supports opportunistic. Results found that total exclusions are negatively related to future CFO and stock returns. Specifically, results show that $1 of non-GAAP earnings in the current quarter is correlated with $2.698 of future cash flows over the next year. Although, $1 of total exclusions is correlated with $1.120 less of future cash flows over the next year, implying these exclusions (especially ‘other exclusions’) are of a recurrent nature. The same holds for stock returns once ‘total exclusions’ is broken down into special and other exclusions.</td>
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## APPENDIX – TABLE 4

### SUMMARY OF THE LITERATURE ON INFORMATIVE MOTIVES FOR NON-GAAP DISCLOSURES

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<tr>
<td>Bradshaw and Sloan (2002)</td>
<td>Non-GAAP and GAAP earnings from actual press releases from Lexis-Nexis Academic Universe database and financial and accounting data from Compustat and CRSP for 108,864 firm-quarter observations.</td>
<td>Forecasts errors for street earnings and GAAP earnings respectively, as the difference between the forecast and the EPS forecast.</td>
<td>Supports informative. Reporting of street earnings has increased over the last decade as the magnitude difference between GAAP and street earnings, and the growth of GAAP and street earnings, have increased.</td>
</tr>
<tr>
<td>Bhattacharya et al. (2003)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis, 1,149 firm-quarters over 1998-2000. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Abnormal returns around earnings announcement, one-quarter-ahead revisions in analyst earnings forecasts.</td>
<td>Supports informative. Results show that EPS from operations are a superior measure of informativeness than non-GAAP and GAAP earnings. Overall, the findings support the informative hypothesis.</td>
</tr>
<tr>
<td>Brown and Sivakumar (2003)</td>
<td>Street earnings obtained from I/B/E/S, Compustat (quarterly) and financial and other accounting data from Compustat and CRSP. Final sample of 11,036 firm-quarters over 1989-1997.</td>
<td>Future earnings, abnormal returns and stock price.</td>
<td>Supports informative. Results show that EPS from operations and street earnings are better in predicting future earnings than EPS measures around 56% of the time. In terms of valuation, street earnings are a superior measure to GAAP earnings.</td>
</tr>
<tr>
<td>Lougee and Marquardt (2004)</td>
<td>Non-GAAP earnings from actual press releases from Lexis-Nexis Academic Universe database and financial and accounting data from Compustat and CRSP for 249 press releases for 135 firms over 1997-1999.</td>
<td>Probit estimation of non-GAAP earnings reporting on firm characteristics and earnings informativeness, abnormal returns and predictive ability of future earnings and returns.</td>
<td>Supports informative and opportunistic. Firstly, results show that firms with less informative GAAP earnings, concentrated in high-technology industries, which have significantly greater sales, growth, earnings variability and are more likely to decide on earnings benchmarks than other firms report non-GAAP earnings to meet these benchmarks. This evidence is more likely to support the informative view than the opportunistic view.</td>
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**AUTHOR (YEAR)** refers to the authors of the study and the year of publication.

**SAMPLE SOURCES** describe the data and methods used in the study.

**KEY TEST VARIABLES** detail the specific variables used to test the hypotheses.

**FINDINGS** summarize the conclusions drawn from the analysis.
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<td>Abarbanell and Lehavy (2007)</td>
<td>Street earnings obtained from I/B/E/S, Compustat (quarterly) for GAAP earnings. Additional consensus earnings forecasts and reported earnings from First Call. Final sample of 159,220 observations from 8,651 firms over 1985–1998.</td>
<td>I/B/E/S street earnings and Compustat GAAP earnings. Exclusions/inclusions calculated as the difference between street earnings and various definitions of EPS before extraordinary items extracted from Compustat. Forecast errors I/B/E/S and Compustat (forecast errors equal quarterly earnings per share minus quarterly consensus forecasted earnings per share).</td>
<td>Earnings difference, forecast errors I/B/E/S and Compustat, ERC for various variables based on both I/B/E/S and Compustat earnings, and future returns.</td>
<td>Neither informative nor opportunistic. Results suggest that the tails of the distribution drive prior evidence on the relevance and predictive ability of street earnings measures. Specifically, they find evidence of a high incidence of large differences and zero differences. In addition, they suggest that a one-time shift in the differences between COMPUSTAT and I/B/E/S earnings in 1990 and the similar shift in earnings surprises in 1991 is associated with the relative infrequency of firms’ recognition of the adjusted items embedded in the street earnings calculations.</td>
</tr>
<tr>
<td>Choi et al. (2007)</td>
<td>Non-GAAP earnings from actual firms’ press releases, Thomson Datastream and V/B/E/S for recurring earnings other than the management-adjusted earnings metrics. Final sample size of 1,301 observations over 1993–2001.</td>
<td>Non-GAAP earnings disclosed by management, street earnings (I/B/E/S), and EPS before all non-recurring items.</td>
<td>Future operating cash flows, informational properties of different measures of ‘exclusions’, and stock price.</td>
<td>Supports informative. Adjustments related to non-operating activities (comprises almost 100% of the exclusions reported by the non-GAAP disclosures). Findings suggest that adjustments are in general of a transitory nature, although, some evidence related to the classification of transitory gains may suggest opportunistic behaviour. The mean magnitude difference between non-GAAP and GAAP EPS is around 7 pence, representing an increase of about 54% over the relative GAAP EPS. Results from future operating cash flows and stock price that managers are better at identifying the nature of the expenses (transitory vs. recurrent) than Thomson Datastream.</td>
</tr>
<tr>
<td>Cohen et al. (2007)</td>
<td>Street earnings obtained from I/B/E/S, Compustat (quarterly) and CRSP (daily) for accounting and financial data. Final sample of 188,732 firm-quarter observations over 1985–2003.</td>
<td>Street earnings from V/B/E/S; Forecast errors is the difference between I/B/E/S actual EPS (GAAP EPS) and forecasted EPS.</td>
<td>Returns, forecast errors and ERC.</td>
<td>Overall, the results show that the measurement error of GAAP earnings expectations and V/B/E/S adjustment errors bias previous ERC’s results for GAAP and street earnings. Nevertheless, results reassure previous findings of investors placing more reliance on street earnings than GAAP earnings.</td>
</tr>
<tr>
<td>Entwistle et al. (2010)</td>
<td>Non-GAAP earnings from actual press releases from firms’ websites, final sample of 1,486 firm-years over 1998–2000. Street earnings from I/B/E/S, and financial and other accounting data from Compustat and CRSP.</td>
<td>Non-GAAP earnings, GAAP earnings and I/B/E/S (street) earnings.</td>
<td>Returns and stock prices.</td>
<td>Supports informative. Results from value relevance show that non-GAAP earnings are more value-relevant than street and GAAP earnings respectively (adjusted R2 of 30.52%, 26.02% and 19.13%). Similar results hold for accounting-based valuation models. Lastly, non-GAAP earnings are also a superior measure in predicting future earnings over street and GAAP earnings.</td>
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### APPENDIX – TABLE 4  SUMMARY OF THE LITERATURE ON INFORMATIVE MOTIVES FOR NON-GAAP DISCLOSURES  (continued)

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<th>AUTHOR (YEAR)</th>
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<td>Bradshaw et al. (2014)</td>
<td>I/B/E/S for non-GAAP earnings and GAAP and non-GAAP earnings forecast. CRSP, Compustat for financial information and US. Final sample of 69,774 firm-quarters over 2003–2012.</td>
<td>Total exclusions; FE non-GAAP as the difference between non-GAAP earnings and non-GAAP forecast; FE GAAP-Noisy as the difference between GAAP earnings and non-GAAP forecast; FE GAAP-Clean as the difference between GAAP earnings and GAAP forecast.</td>
<td>Returns, ERC and $R^2$.</td>
<td>Supports informative. 79% of the adjustments (total exclusions) are related to exclusion of an expense item. The mean magnitude difference between non-GAAP and GAAP is 0.043 cents per share. Study shows that despite 55% of the GAAP forecast error being misclassified as earnings surprise (i.e., GAAP forecast error is comprised of 71 cents of measurement error and 2.2 cents of true forecast error) and reducing the bias towards investor’s response to GAAP metrics, investors are still found to rely more on non-GAAP earnings than the relative GAAP measure.</td>
</tr>
<tr>
<td>Curtis et al. (2014)</td>
<td>Non-GAAP earnings from actual firms’ press releases, street earnings and earnings expectations from I/B/E/S, and financial and other accounting data from Compustat, EDGAR and CRSP. Final sample of 1,920 firm-quarters from 2004 to 2009 with transitory gains (restricted to observations with net income-increasing special items of at least one penny per share).</td>
<td>Operating EPS (Compustat OPEPSQ), Analyst Actual equals realised EPS (I/B/E/S Actual – EPS), Analyst Forecast equals median consensus analyst forecast (I/B/E/S – Medest EPS); Operating Earnings Surprise equals Operating Earnings minus Analyst Forecast; Street Earnings Surprise equals Analyst Actual minus Analyst Forecast; Transitory Gain equals after-tax transitory gain per share (Compustat (SPIQ×0.65)/CSHPQ).</td>
<td>Future operating earnings, announcement return and filing return.</td>
<td>Supports informative. Results show that $1 of operating earnings (transitory gains) is associated with $2.46 ($–0.41) of operating earnings (earnings) over the next four quarters, implying managerial desire to report more informative earnings metrics. ERCs on a transitory gains suggests that investors price transitory gains as if they are of a transitory nature (results from nearly half of the sample). Although, some firms (the other half, considered to be opaque disclosers) may appear to engage in opportunistic reporting as they disclose non-GAAP earnings in transitory loss quarters, but not transitory gain quarters.</td>
</tr>
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</table>
APPENDIX – TABLE 5  SUMMARY OF THE LITERATURE ON THE ROLE OF CORPORATE GOVERNANCE, EXECUTIVE COMPENSATION AND EXTERNAL AUDITORS IN INFLUENCING NON-GAAP DISCLOSURES

<table>
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<tr>
<td>Isidro and Marques (2010)</td>
<td>Sample includes firms listed on the Financial Times 2006 list of the 500 largest European firms. Manager-adjusted non-GAAP financial measures from press releases extracted from Factiva. Financial data from Worldscope/Datastream/IBES. Final sample of 805 firm-years for 2003, 2004 and 2005 financial years.</td>
<td>Non-GAAP EPS is the first non-GAAP earnings measure disclosed by managers in the annual announcement press releases. GAAP EPS is operating earnings disclosed in the financial reports.</td>
<td>Non-GAAP reporting decision. Supports opportunistic. Findings suggest that whenever managers have compensation plans linked to the performance of the firm, managers have a higher likelihood of:  • disclosing non-GAAP metrics;  • giving more emphasis to non-GAAP metrics on the earnings press releases;  • making more adjustments of a recurring nature when deriving non-GAAP earnings;  • avoiding disclosure of reconciliation between non-GAAP earnings and relative GAAP earnings.</td>
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<tr>
<td>Frankel et al. (2011)</td>
<td>Non-GAAP earnings from actual press releases. Financial data and analyst forecasts from Compustat and I/B/E/S respectively. Board of director independence information is from the Investor Research Responsibility Center’s (IRRC) corporate governance dataset, and insider trading data are from Thomson Financial. Final sample size of 4,246 firm-quarter observations over 1998–2005.</td>
<td>Non-GAAP earnings as quarterly non-GAAP EPS; Non-GAAP exclusions (NON-GAAP EXCLUSIONS) as non-GAAP earnings minus GAAP earnings; Future GAAP earnings (FUTURE GAAP EARNINGS) as EPS before extraordinary items summed over quarter $q+1$ through $q+4$; Future operating income (FUTURE OPERATING INCOME) as operating income per diluted share summed over quarters $q+1$ through $q+4$.</td>
<td>Non-GAAP exclusions/Board independence/Future GAAP earnings/Future operating income.</td>
<td>Supports opportunistic. Findings suggest that non-GAAP exclusions are associated with lower future GAAP earnings of $0.29 for firms with a fully independent board, whereas for firms with a non-independent board the association jumps to $1.32. Results also indicate this form of aggressive reporting showed an overall decline after Regulation G implementation.</td>
</tr>
<tr>
<td>Jennings and Marques (2011)</td>
<td>Non-GAAP earnings from actual press releases. Financial data, market stock return and analyst forecast from Compustat, CRSP and I/B/E/S respectively. Board of director independence information from the IRRC corporate governance dataset, and institutional holdings data from Thomson Financial. Final sample size of 3,681 observations over 2001–2003.</td>
<td>Non-GAAP EPS disclosed in the firm’s press releases. GAAP earnings as reported GAAP EPS. Forecast errors for non-GAAP as the difference between the actual minus the forecasted earnings.</td>
<td>Adjustment made by the firm to GAAP EPS (ADJ) = GAAP earnings, – NGE)/Future GAAP earnings/Future cumulative excess return.</td>
<td>Supports opportunistic. Results show that prior to SEC intervention, persistence of manager-generated adjustments by firms with relatively weaker corporate governance had the potential to mislead investors, as they could not identify the recurring nature of some of these adjustments. Such persistence disappears after SEC intervention. Same trend occurs when investigating the correlation between future returns and non-GAAP adjustments.</td>
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</table>
## APPENDIX – TABLE 5  SUMMARY OF THE LITERATURE ON THE ROLE OF CORPORATE GOVERNANCE, EXECUTIVE COMPENSATION AND EXTERNAL AUDITORS IN INFLUENCING NON-GAAP DISCLOSURES (continued)

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<tr>
<td>Chen et al. (2012)</td>
<td>Actual non-GAAP earnings hand-collected from press releases. I/B/E/S actual earnings as street earnings. Financial and market data from Compustat and CRSP. Final audit fees sample of 16,495 firm-year observations, and resignation sample of 13,538 firm-years over 2000–2006.</td>
<td>Non-GAAP EPS, I/B/E/S EPS and TOTA_EXCL, as the sum of quarterly differences between the IBES actual EPS and Compustat EPS before extraordinary items and discontinued operations.</td>
<td>Auditor resignation and audit fees.</td>
<td>Supports opportunistic. Results show that more opportunistic non-GAAP earnings exclusions (higher magnitude total exclusions) generate higher audit fees and higher audit resignation. These are similar findings for the pre- and post-SOX period. Findings from disaggregating “total exclusions” into “other exclusions” and “special items” show on average that audit fees are positively correlated with both components, especially after SOX.</td>
</tr>
<tr>
<td>Grey et al. (2013)</td>
<td>The sample comprises the 500 largest London Stock Exchange listed non-financial firms in 2001. Alternative EPS disclosures along with remuneration data were hand-collected from firms’ published financial statements. I/B/E/S-defined EPS from I/B/E/S. Financial statement, market data and industry classifications from Datastream, and corporate governance data from Manifest Information Systems Ltd. Final sample of 980 firm-years over 2001–2003.</td>
<td>Relative un informativeness of EPS$<em>{FRS3}$ with respect to sustainable earnings (MAGDIFF) as the measure of the price-scaled difference between EPS$</em>{FRS3}$ and the corresponding EPS$_{IBES}$ figure.</td>
<td>Disclosure of adjusted EPS figures/Presence of an EPS target in ESOS (executive share options plan).</td>
<td>Supports opportunistic. Results show that the inclusion of an EPS target in the executive share options plan do affect positively the likelihood of additional disclosure of alternative EPS figures in the earnings announcement. No robust findings can evidence that the disclosure of an alternative EPS figure is to counteract the lack of informativeness of EPS$_{FRS3}$.</td>
</tr>
<tr>
<td>Kyung et al. (2013)</td>
<td>Clawback data extracted from The Corporate Library and I/B/E/S actual earnings. Final sample of 5,208 (38,486) clawback adopters (non-adopters) over 2005–2009.</td>
<td>I/B/E/S to proxy for non-GAAP earnings disclosed by managers. Non-GAAP exclusions as non-GAAP earnings less income before extraordinary items per share.</td>
<td>Prob(non-GAAP)/Future operating income.</td>
<td>Supports opportunistic. Findings suggest that adopting clawback provision increases the frequency of disclosing non-GAAP earnings figures and deteriorates the quality of non-GAAP exclusions.</td>
</tr>
<tr>
<td>Black et al. (2014)</td>
<td>Non-GAAP data from actual press release search on Newswire and Business Wire on LexisNexis. Additional data must be available on CRSP, Compustat, I/B/E/S, AuditAnalytics databases. Compensation contract data from proxy statements. Final sample of 8,014 quarterly observations from 1,967 firms over 2000–2006.</td>
<td>GAAP EPS, non-GAAP EPS and I/B/E/S actual EPS.</td>
<td>LTPLAN is a dummy variable coded one if the executive compensation contract includes a long-term performance plan and zero otherwise. HIGHFEES is dummy variable coded one if ratio of audit fees as a percentage of sales is higher than the median audit-fees-to-sales ratio for the firm’s 4-digit SIC code. Pr(Aggressive Measure = 1).</td>
<td>Supports opportunistic. Results suggest that audit effort (proxied by higher-than-normal audit fees) is negatively correlated with the likelihood of managers engaging in aggressive non-GAAP reporting. Audit effort is also found to minimise the propensity of managers using non-GAAP earnings to achieve strategic earnings target but only in the post-SOX period. Additional findings suggest managers with long-term performance plans engage in less aggressive non-GAAP reporting, however, the same results do not hold in the post-SOX period.</td>
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<tr>
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<td>Doyle et al. (2003)</td>
<td>Street earnings as a proxy for non-GAAP earnings from I/B/E/S. Other financial and accounting data sourced from CRSP and Compustat. Final sample of 143,462 firm-quarter observations over 1988–1999.</td>
<td>Non-GAAP earnings as I/B/E/S actual EPS. Operating income per share is defined in Compustat as GAAP EPS given above less special items per share (on an after-tax basis). Total exclusions (EXCLUSIONS) equal to non-GAAP earnings less GAAP earnings. Special Items equals the difference between Operating Income and GAAP Earnings. Other exclusions as the difference between total exclusions and special items.</td>
<td>Future cash flow/Market-adjusted stock return.</td>
<td>Future cash flow/Market-adjusted stock return.</td>
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<tr>
<td>Frederickson and Miller (2004)</td>
<td>Experimental setting using non-professional investors and financial analysts: MBA students from a US World &amp; News Report top-35 MBA program as proxies for non-professional investors. Earnings announcement for a hypothetical company fiscal year 2001 annual and fourth-quarter earnings.</td>
<td>GAAP and non-GAAP earnings as stated in the earnings announcement. Non-GAAP earnings are calculated by excluding goodwill amortisation, litigation settlement, payroll taxes on exercised employee stock options and excess bad debt expense.</td>
<td>Stock price judgement.</td>
<td>Supports opportunistic. The mean MBA stock price judgement is $28.31 in the pro forma condition and $25.36 in the GAAP condition, a difference of almost 12%. Results suggest that when the non-GAAP earnings in their experiment exceed GAAP earnings, less-sophisticated and non-professional investors (i.e., MBAs) receiving a press release including a non-GAAP earnings figure assess a higher stock price for the firm than do non-professional investors who receive the standard ‘GAAP only’ disclosures. However, more-sophisticated investors’ (i.e., financial analysts) judgements are not affected by the non-GAAP disclosures. Their results indicate non-GAAP disclosures affect non-professional investors’ favourableness assessments through unintended cognitive effects, where the mere presence of non-GAAP information, regardless of its relevance to decision making and the judgement, affects investors’ information processing.</td>
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### APPENDIX – TABLE 6 SUMMARY OF THE LITERATURE ON MARKET PERCEPTIONS OF NON-GAAP REPORTING

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<td>Lougee and Marquardt (2004)</td>
<td>Non-GAAP earnings from actual press releases from Lexis-Nexis Academic Universe database. Compustat and CRSP for additional accounting and financial data. Final sample of 249 press releases for 135 firms over 1997–1999.</td>
<td>Non-GAAP earnings from actual press releases and GAAP earnings before extraordinary items divided by market capitalization.</td>
<td>Probit estimation of non-GAAP reporting on firm characteristics between actual sample and matched sample, GAAP earnings informativeness, abnormal returns and predictive ability of future earnings and returns.</td>
<td>Supports informative. Firstly, results suggest that investors tend to ignore (attach less weight to) non-GAAP earnings around earnings announcement dates when prior GAAP earnings informativeness is high or when GAAP earnings are lower than the expectation. Additional results show that firms with less informative GAAP earnings, concentrated in high-technology industries, with significantly greater sales growth and earnings variability, are more likely to disclose non-GAAP earnings than other firms (informative). Firms where GAAP earnings fail to meet an earnings benchmark are more likely to report non-GAAP earnings. Overall, in the absence of strategic disclosure, non-GAAP earnings are more value-relevant than GAAP earnings.</td>
</tr>
<tr>
<td>Bowen et al. (2005)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis. Number of analyst forecasts from I/B/E/S, and financial and other accounting data from Compustat and CRSP. Final sample of 1,199 firm-quarters from 208 unique firms over 2001–2002.</td>
<td>Non-GAAP earnings as earnings adjusted by managers (excluding/including items that would be otherwise part of GAAP earnings). GAAP earnings as either bottom-line earnings or earnings before discontinued operations or before extraordinary items.</td>
<td>Non-GAAP emphasis/GAAP emphasis.</td>
<td>Supports opportunistic. Results suggest that firms with lower value relevance of earnings and greater media exposure place higher (lower) levels of emphasis on non-GAAP (GAAP) earnings figures. Firms also tend to emphasise the earnings metric that portrays better firm performance compared to the prior year. More importantly, the stock market reaction to non-GAAP earnings increases with the level of (relative) emphasis, suggesting that investors’ perception of non-GAAP disclosures are affected by managers’ emphasis decisions and investors tend to overreact to the emphasised non-GAAP information.</td>
</tr>
<tr>
<td>Johnson and Schwartz (2005)</td>
<td>Non-GAAP earnings from actual press releases from firms listed on NYSE, AMEX or NASDAQ. Additional accounting data from Zacks Investment Research. Final sample of 433 firms over June 2000 to August 2000.</td>
<td>Non-GAAP earnings as actual non-GAAP EPS. GAAP earnings, GAAP operating income, and the adjusted 'actual' earnings reported by Zacks Investment Research. Forecast error of the firm for quarter (UE) as seasonal random walk with trend, scaled by its estimation period standard deviation, or scaled by the share price five days prior to the quarterly earnings announcement.</td>
<td>Market multiple/CAR.</td>
<td>Supports informative. Results find no evidence of a stock return or price premium for non-GAAP disclosure firms, suggesting that investors can fully understand the information contained in non-GAAP disclosure.</td>
</tr>
<tr>
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<td>Elliot (2006)</td>
<td>Experimental setting. Earnings press releases form a hypothetical firm in the technology sector from the first-quarters ended February 2002 and 2001. 89 first-year MBA students as non-professional investors and 55 sell-side analysts.</td>
<td>Non-GAAP earnings and GAAP earnings on EPS basis. Items excluded from GAAP earnings: - stock-based compensation charges; - amortisation of purchased intangibles; - acquired in-process R&amp;D - amortisation of goodwill and other intangibles; - restructuring charges; - gain on sale of investments; - equity investment losses.</td>
<td>Earnings performance judgement (scale marked in increments of ten with endpoints of 0 and 100 labelled ‘very weak/very strong’).</td>
<td>Supports opportunistic. Evidence shows that the only differential factor was the presence of a quantitative reconciliation. For non-professional investors, the presence of reconciliation mitigated any influence caused by the emphasis on pro forma earnings, whereas for analysts, such additional information increased the reliability of pro forma earnings.</td>
</tr>
<tr>
<td>Alle et al. (2007)</td>
<td>Actual non-GAAP press releases extracted from Newswire and Business Wire on Lexis-Nexis. Additional financial information, stock returns and analyst forecast data from Compustat, CRSP and I/B/E/S database. Final sample of 4,928 observations over 1998–2003.</td>
<td>Non-GAAP and GAAP earnings on EPS basis.</td>
<td>CAR = size-adjusted abnormal returns cumulated over the three-day announcement window, SML NETBUY = small investors’ abnormal net buying activities over the three-day announcement window, LRG NETBUY = large investors’ abnormal net buying activities over the three-day announcement window, SURPRISE = the I/B/E/S actual EPS minus the mean analyst forecast over the 30-day window preceding the earnings announcement.</td>
<td>Supports opportunistic. As opposed to sophisticated investors, less-sophisticated investors rely more on earnings release when pro forma earnings are emphasised, trading in the same direction as the earnings surprise. Such reliance is also noticed when a quantitative reconciliation is provided, although this effect disappears after Regulation G implementation. The experimental results also suggest that the strategic emphasis of non-GAAP information affects non-professional investors’ judgement.</td>
</tr>
<tr>
<td>Anderson and Hellman (2007)</td>
<td>Experimental setting consisting of two types of earnings release. One containing both non-GAAP and GAAP reports, while the second only contains a GAAP report. A total of 36 financial analysts are part of the experiment.</td>
<td>Non-GAAP and GAAP earnings on total basis and EPS basis.</td>
<td>Participants’ EPS forecast based on GAAP or GAAP and pro forma information (measured on an 11-point scale ranging from ‘250 SEK’ (1) to ‘50 SEK’ (11)). Participants’ confidence in EPS forecast (measured on a 6-point scale ranging from ‘very unsure’ to ‘very sure’).</td>
<td>The participants who examined the pro forma earnings release predicted EPS (according to GAAP) to be significantly higher than those who received the report based on GAAP information only.</td>
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## APPENDIX – TABLE 6  SUMMARY OF THE LITERATURE ON MARKET PERCEPTIONS OF NON-GAAP REPORTING (continued)

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  • pro forma forecast error (FE_{PROFORMA})  
  • managers’ adjusted-GAAP EPS minus the I/B/E/S mean forecast, scaled by price on day t–5;  
  • I/B/E/S forecast error (FE_{I/B/E/S}) I/B/E/S actual EPS minus the I/B/E/S mean forecast, scaled by price on day t–5. | SML_NETBUY (small investors’ day t abnormal net-buy volume)  
MED_NETBUY (abnormal net-buy volume of medium-sized investors)  
LRG_NETBUY (abnormal net-buy volume of large investors). | Supports opportunistic. Consistent with prior evidence, results show that less sophisticated investors tend to trade more at the earnings release day, and on the direction of the earnings surprise. Quite the opposite trend is related to sophisticated investors, who both do not trade on the very first days of the earnings release and on managers’ adjusted earnings figure. |
<p>| Landsman et al. (2007)  | Data collected from Compustat Primary, Secondary and Tertiary, Full Coverage, and Research Annual Industrial Files and the 2001 IBES analyst earnings database. Final sample of 21,749 firm-year observations over 1990–2000. | Non-GAAP earnings as the I/B/E/S estimate of operating income by adjusting reported net income (NI) using analysts’ consensus earnings forecasts. GAAP earnings as operating income, from Compustat. NI as income before extraordinary items and discontinued operations. | Total exclusions (Net income – non-GAAP earnings), special items (Net income – GAAP earnings) or other exclusions (GAAP earnings – non-GAAP earnings) (X). | Supports opportunistic. Consistent with Doyle et al. (2003), results show that the market misprices both positive and negative total exclusions, special items and other exclusions. Quantitative reconciliations required under SOX will potentially minimise such mispricing, as investors will be able to assess separately items excluded from pro forma earnings. |</p>
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<tr>
<td>Chen (2010)</td>
<td>Data collected from I/B/E/S, CRSP and Compustat. The pre-Reg G final sample of 114,685, 107,444, 100,787 and 95,128 observations in the analysis for quarters t + 1 to t + 4, respectively. The post-Reg G final sample of 27,420, 23,926, 20,648 and 17,510 observations in the analysis for quarters t + 1 to t + 4, respectively. Sample period over 1992–2005.</td>
<td>• Street earnings (STR); • actual quarterly EPS reported in the I/B/E/S Unadjusted Summary History File; • street exclusions (EX); • GAAP earnings less street earnings; • analyst earnings forecast (AF) Last median consensus forecast of quarterly earnings per share issued before the earnings announcement date, as reported in the I/B/E/S; • forecast error (FE); • street earnings less the analyst forecast; • accruals (ACC); • GAAP earnings per share less the net cash flows from operations per share; • growth (GROW); • growth rate in net sales over the same quarter of the previous year.</td>
<td>Future earnings/Earnings forecast/Forecast errors/CAR</td>
<td>Supports opportunistic. Results show that investors underestimate the persistence of expense items that are included in GAAP earnings but excluded from street earnings to allow firms to meet or beat analyst forecasts, especially in the period before the introduction of Regulation G. In contrast, there is little evidence that financial analysts underestimate such exclusions.</td>
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<td>Hsu and Kross (2011)</td>
<td>Street earnings obtained from I/B/E/S. Compustat (quarterly) for accounting and financial data. Final sample of 234,461 firm-quarter observations.</td>
<td>• Street earnings as proxy for non-GAAP earnings, and EPS from continuing operations as GAAP earnings. Special items on after-tax basis as the difference between quarterly EPS from continuing operations and quarterly after-tax operating income.</td>
<td>Persistence of special items for future earnings, determinants of the inclusion/exclusion of special items (announcement period returns and future returns), and market pricing of special items.</td>
<td>Supports opportunistic. Results suggest that investors overprice included special items around earnings announcements, which are subsequently corrected in later periods, but excluded special items are appropriately priced. Specifically, results show that managers tend to include special items in street earnings when the same assists income smoothing. Also, positive special items are preferred inclusions over street earnings, especially when used as a benchmark-beating tool (to avoid loss or meeting the same earnings from the relative previous period). For instances where special items are negative, managers avoid their inclusion in street earnings.</td>
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| Christensen et al. (2014) | Actual non-GAAP earnings collected from quarterly earnings press releases searched on Newswire and Business Wire on LexisNexis. Additional financial information from COMPUSTAT, stock return and trading volume from CRSP, and analyst earnings forecasts from I/B/E/S. Management guidance data from First Call and institutional holdings data from Thomson Financial. Final sample of 1,908 firm-quarters from 902 firms over 1998–2006. | Non-GAAP earnings per share as reported for the current quarter and its relative GAAP EPS. FERROR = forecast error calculated as I/B/E/S EPS minus the last mean EPS forecast before the earnings announcement date, scaled by stock price five days before the earnings announcement as reported in CRSP. | • Ratio of short volume to total trading volume (RELSS); 
• whether earnings announcements contain pro forma disclosures (PFx); 
• PFx REC_ITEMS; 
• PFx TARGET. | Supports opportunistic. Results suggest that short selling is greater around earnings announcements, especially for firms that are non-GAAP disclosers (increases by 5.2% of total trading volume). Short sellers exploit market mispricing caused by non-GAAP reporting, targeting especially firms that engage in aggressive non-GAAP exclusions, such as exclusions of recurring items and stock-based compensation expense. |
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<td>Walker and Louvari (2003)</td>
<td>Random sample from London Stock Exchange. Annual reports from PENCOM CD-ROM. EPS from FT Extel or Datastream. Final sample of 237 firms’ press releases from 1996.</td>
<td>Non-GAAP earnings and GAAP earnings (FRS3) on EPS basis.</td>
<td>Disclosure choice (DISCL); FRS3 EPS; alternate EPS; analyst following (NOAF).</td>
<td>Supports both opportunistic and informative. Results suggest that the regulation change has triggered both opportunistic and informative behaviours in non-GAAP disclosures. The study found strong evidence supporting the fact that firms with high levels of disclosure are more likely to disclose alternate EPS measures. In addition, firms tend to report alternative EPS when the same exceeds FRS3 EPS. 38% of the sample disclosed at least one non-GAAP earnings metric.</td>
</tr>
<tr>
<td>Bowen et al. (2005)</td>
<td>Non-GAAP earnings from actual press releases from Newswire and Business Wire on Lexis-Nexis. Number of analyst forecasts from I/B/E/S, and financial and other accounting data from Compustat and CRSP. Final sample of 1,199 firm-quarters from 208 unique firms over 2001–2002.</td>
<td>Non-GAAP earnings as earnings adjusted by managers (excluding/including items that would be otherwise part of GAAP earnings). GAAP earnings as either bottom-line earnings or earnings before discontinued operations or before extraordinary items.</td>
<td>Non-GAAP emphasis/GAAP emphasis.</td>
<td>Supports opportunistic. Results suggest that managers decrease (increase) the level of emphasis on non-GAAP (GAAP) figures subsequent to the SEC ‘Cautionary Advice’ in December 2001, and such a decrease is more pronounced in firms with greater exposure to media coverage. In addition, firms with lower value relevance of earnings and greater media exposure place higher (lower) levels of emphasis on non-GAAP (GAAP) earnings figures. Firms also tend to emphasise the earnings metric that portrays better firm performance compared to the prior year. More importantly, the stock market reaction to non-GAAP earnings increases with the level of (relative) emphasis, suggesting that investors’ perception of non-GAAP disclosures are affected by managers’ emphasis decisions and investors tend to over-react to the emphasised non-GAAP information.</td>
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<td>Entwistle et al. (2006a)</td>
<td>Actual non-GAAP earnings from press releases of firms included in the S&amp;P 500. Final sample of 448 observations over 2001–2003.</td>
<td>Non-GAAP earnings and GAAP earnings on EPS basis.</td>
<td>Non-GAAP earnings/GAAP earnings.</td>
<td>Supports opportunistic. After the adoption of Regulation G, non-GAAP disclosures are presented in a much less prominent manner in press releases. There are 44% fewer firms reporting non-GAAP earnings in the press release headline, while 77% fewer firms discuss non-GAAP figures in a manner that dominates GAAP figures in the full press release. In addition, the average difference between non-GAAP and GAAP EPS is 116% of the absolute value of GAAP earnings in 2001, while in 2003 this number decreases to only 54%.</td>
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<tr>
<td>Entwistle et al. (2006b)</td>
<td>Actual non-GAAP earnings from press releases of firms included in the S&amp;P 500. Final sample of 1,477 observations over 2001–2003.</td>
<td>Non-GAAP earnings and GAAP earnings on EPS basis.</td>
<td>Entitled ‘GAAP terminology’ in the press release but later found to be a non-GAAP earnings amount. Entitled ‘claiming achievements’ as when firm makes various claims in its press release headline about its performance for the period, but all claims are made based on non-GAAP rather than GAAP results.</td>
<td>Supports opportunistic. 77% of the sample provided a non-GAAP earnings measure in their annual earnings press releases. They find that, while over 10% of S&amp;P 500 firms uses misleading languages prior to Regulation G, the percentage reduces to less than 1% in 2003.</td>
</tr>
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### APPENDIX – TABLE 7 SUMMARY OF THE LITERATURE ON HOW REGULATION IMPACTS NON-GAAP DISCLOSURES (continued)

<table>
<thead>
<tr>
<th>AUTHOR (YEAR)</th>
<th>SAMPLE SOURCES</th>
<th>NON-GAAP EARNINGS MEASURES</th>
<th>KEY TEST VARIABLES</th>
<th>FINDINGS</th>
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</thead>
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<tr>
<td>Marques (2006)</td>
<td>361 firms over 2001–2002</td>
<td>Non-GAAP earnings from I/B/E/S, actual earnings from Compustat</td>
<td>Difference between non-GAAP and GAAP figures as differences between actual non-GAAP earnings and GAAP figures</td>
<td>Supports opportunistic. Results show that the probability of disclosing non-GAAP earnings was stable in 2001 and 2002 following the issuance of the SOX Act. The probability of disclosing non-GAAP earnings increased significantly after Regulation G was issued. The positive abnormal return around earnings announcements when non-GAAP earnings are reported after Regulation G, but not before, is consistent with the idea that the SEC requires opportunistic behavior. Similarly, the requirement of reconciling between non-GAAP earnings and GAAP earnings has improved value relevance and comparability of the non-GAAP measure within the REIT industry.</td>
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<tr>
<td>Baik et al. (2008)</td>
<td>1,205 firm-year observations over 1995–2003</td>
<td>FFO (non-GAAP) and FFO (non-GAAP earnings) from I/B/E/S and Compustat</td>
<td>Difference between FFO and GAAP earnings as GAAP earnings minus FFO</td>
<td>Supports opportunistic. Evidence finds that the NAREIT through its National Policy Bulletin that reduces managers’ discretionary behavior. Similarly, the requirement of reconciling between FFO and GAAP earnings has improved value relevance and comparability of the FFO measure within the REIT industry.</td>
</tr>
<tr>
<td>Fortin et al. (2008)</td>
<td>385 observations over 2001–2005</td>
<td>FFO (non-GAAP) and FFO (non-GAAP earnings) from I/B/E/S and Compustat</td>
<td>Difference between FFO and GAAP earnings as GAAP earnings minus FFO</td>
<td>Supports opportunistic. Despite results not finding evidence of a reduction in the frequency of non-GAAP reporting after Regulation G, they find that in the post-regulation period: (1) firms in the REIT industry are more likely to follow the industry guidance in defining FFO; (2) exclusions from FFO have become more transitory; (3) firms are less likely to opportunistically define FFO to beat analyst forecasts.</td>
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<td>Heflin and Hsu (2008)</td>
<td>2,138 firms over 2000–2005</td>
<td>Non-GAAP earnings as GAAP earnings from I/B/E/S and Compustat</td>
<td>Difference between non-GAAP and GAAP earnings as non-GAAP earnings minus GAAP earnings</td>
<td>Supports opportunistic. Results show that after Regulation G, there was an overall decrease in the number of non-GAAP disclosures, a decline in the magnitude difference between non-GAAP and GAAP earnings, and the probability of auditor disagreement and are more likely to make fewer and smaller exclusions from FFO. The latter is observed particularly when analyzing ‘other-item’ exclusions.</td>
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<tr>
<td>Kolev et al. (2008)</td>
<td>104,954 firm-quarter observations over 1998–2004</td>
<td>Non-GAAP earnings as GAAP earnings from I/B/E/S and Compustat</td>
<td>Difference between non-GAAP and GAAP earnings as non-GAAP earnings minus GAAP earnings</td>
<td>Supports opportunistic. Results show that after Regulation G, the number of non-GAAP earnings disclosures was significantly lower. The magnitude difference between non-GAAP and GAAP earnings was also lower after Regulation G. The probability of auditor disagreement and are less likely to make fewer and smaller exclusions from FFO. Future operating income as operating income less income before extraordinary items per share. GAAP earnings are summed over four quarters starting with q+1.</td>
</tr>
<tr>
<td>AUTHOR (YEAR)</td>
<td>SAMPLE/SOURCES</td>
<td>NON-GAAP AND/OR GAAP MEASURES</td>
<td>KEY TEST VARIABLES</td>
<td>FINDINGS</td>
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<td>Chen et al. (2012)</td>
<td>Actual non-GAAP earnings hand-collected from press releases. I/B/E/S actual earnings as street earnings. Financial and market data from Compustat and CRSP. Final audit fees sample of 16,495 firm-year observations, and resignation sample of 13,538 firm-years over 2000–2006.</td>
<td>Non-GAAP EPS, I/B/E/S EPS and TOTA_EXCL, as the sum of quarterly differences between the IBES actual EPS and Compustat EPS before extraordinary items and discontinued operations.</td>
<td>Auditor resignation/Audit fees.</td>
<td>Supports opportunistic. Results show that more opportunistic non-GAAP earnings exclusions (higher magnitude total exclusions) generate higher audit fees and higher audit resignation. These are similar findings for the pre- and post-SOX period. Findings from disaggregating ‘total exclusions’ into ‘other exclusions’ and ‘special items’ show on average that audit fees are positively correlated with both components, especially after SOX.</td>
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<td>Black et al. (2012)</td>
<td>Actual press releases from Newswire and Business Wire on Lexis-Nexis. Financial information from CRSP and Compustat. Analyst earnings forecast from I/B/E/S. Final sample of 9,863 quarterly earnings announcements from 2,396 firms over 1998–2006.</td>
<td>Non-GAAP earnings and GAAP earnings (from operations) on EPS basis.</td>
<td>FEGAAP as GAAP operating earnings minus the mean analysts’ earnings forecast scaled by stock price five days before the earnings announcement. FEPF as non-GAAP earnings minus the mean analysts’ earnings forecast scaled by stock price five days before the earnings announcement.</td>
<td>Supports opportunistic. The frequency of firms using non-GAAP earnings as a benchmark-beating tool decreases from 37% in the pre-SOX period to 30% in the post-SOX period. Although the frequency of firms excluding recurring items had decreased by only 1% (79% vs. 78%).</td>
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<td>Malone et al. (2012)</td>
<td>Actual press releases from firms listed on ASX 200 extracted from the Securities Industry Research Centre of Asia-Pacific (SIRCA) database. Data for analyst adjustments from Aspect Huntley FinAnalysis. Final sample size of 613 firm-years over 2008–2010.</td>
<td>Non-GAAP as reported by the firm and GAAP as NPAT (net profit after tax).</td>
<td>Absolute forecast error measured as ( \frac{A_{i,t} – F_{q,i}}{P_{i,(q–j)}} ). Forecast dispersion measured at months prior to the end of the financial year. ( PF_{DIFF} ) as the difference between non-GAAP and GAAP earnings.</td>
<td>Supports opportunistic. Results suggest that after IFRS implementation in Australia, firms with a higher incidence of remeasurement and one-off items are more likely to disclose non-GAAP figures. The non-GAAP disclosures are found to be associated with lower analyst forecast errors in the subsequent period, suggesting that non-GAAP disclosures are useful for exchange information to financial analysts.</td>
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<td>Kyung (2014)</td>
<td>Street earnings obtained from I/B/E/S. Compustat (quarterly) for other accounting and financial data. Final sample of 234,461 firm-quarter observations.</td>
<td>GAAP earnings as diluted EPS including extraordinary items and discontinued operations. Non-GAAP earnings as I/B/E/S reported actual EPS.</td>
<td>Non-GAAP exclusions as non-GAAP earnings minus GAAP earnings. NewCDI as an indicator variable that equals one if quarter ( q ) is after the fourth calendar quarter of 2009 and zero otherwise. Future Operating Income as EPS from operations, which is summed over four quarters starting from quarter ( q+1 ).</td>
<td>Supports informative. Results show that firms are 8.2% more likely to disclose non-GAAP earnings after the issuance of the new C&amp;DIs compared to the pre-C&amp;DI period, suggesting that the new C&amp;DIs encourage non-GAAP disclosures. Additional results suggest that non-GAAP exclusions are of a higher quality after the issuance of the new C&amp;DIs, suggesting that excessively restrictive enforcement of Regulation G may have precluded the improvement of non-GAAP earnings quality.</td>
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