Journal of Financial Economics xxx (xxxx) xxx

Contents lists available at ScienceDirect

Journal of Financial Economics

journal homepage: www.elsevier.com/locate/jfec

Core earnings: New data and evidence☆

Ethan Rouen[a], Eric C. So[b], Charles C.Y. Wang[a,*]

[a] Harvard Business School, Boston, MA, United States
[b] Massachusetts Institute of Technology, Sloan School of Management, Cambridge, MA, United States

ARTICLE INFO

Article history:
Received 9 January 2020
Revised 20 October 2020
Accepted 18 November 2020
Available online xxx

JEL classification:
C14
G10
G18
M40
M41

Keywords:
Core earnings
Transitory earnings
Non-operating earnings
Quantitative disclosures
Information processing
Fundamental analysis
Valuation

ABSTRACT

Using a novel dataset, we show that components of firms' GAAP earnings stemming from ancillary business activities or transitory shocks are significant in frequency and magnitude. These components have grown over time and are dispersed across various sections of the 10-K. Excluding them from GAAP earnings yields a core earnings measure that distinguishes between the recurring and non-recurring components of net income and forecasts future performance. Analysts and market participants are slow to impound these earnings components' implications, particularly the amounts disclosed in the footnotes. Trading strategies that exploit non-core earnings produce abnormal returns of 8% per year.

1. Introduction

Financial statements contain a wealth of information about a firm's net income, an estimate of the net value flow during a period. However, components of earnings differ in their attributes and relevance for future performance. Some components stem from a firm's central business activities—what we refer to as its "core" earnings. Conversely, other components reflect the results of a firm's ancillary business activities or transitory shocks. Distinguishing these components to discern core earnings is essential for interpreting, communicating, and forecasting firm performance.

☆ For helpful feedback, we thank Bill Schwert (editor), an anonymous referee, Dirk Black, Ilia Dichev, Vivian Fang (discussant), Trevor Harris, Paul Healy, Juhani Linnainmaa (discussant), Pete Lisowsky, Stephen Penman, Edward Riedl, Doug Skinner, Joe Weber, and workshop participants at Acadian Asset Management, the ASSA/AEA Annual Meeting, Arrowstreet Capital, Boston University, Conference on Financial Economics and Accounting, Dartmouth University, Fuller & Thaler, Global Quantitative and Macro Investment Conference, Harvard Business School, Strategic Global Advisors, University of Arizona, and London School of Economics. We also thank Carolyn Liu and Trang Nguyen for excellent research assistance. We are grateful to David Trainer, Lee Moneta-Koehler, and the New Constructs team for providing their data and offering valuable insights. None of the authors received any financial support or have financial dealings with the data provider or hold any paid or unpaid positions at the organization. The organization provided the data for academic research purposes and did not have the right to review the paper prior to its circulation. One of us, for teaching purposes, wrote a Harvard Business School case on the organization, which was based on field interviews and non-public information sources and fully funded by the school. All errors are our own.

* Corresponding author.
E-mail address: charles.cy.wang@hbs.edu (C.C.Y. Wang).

https://doi.org/10.1016/j.jfineco.2021.04.025
0304-405X/

The behavior of sell-side analysts and managers attests to the importance of isolating and identifying components of firms' earnings. For example, analysts regularly report and forecast firms' earnings on a non-GAAP basis ("street earnings") by excluding from GAAP earnings items deemed transitory or not reflective of the central business activities. Similarly, managers commonly report non-GAAP "pro forma" earnings that exclude items they consider unimportant for understanding firm performance.

A concern with metrics such as street or pro forma earnings is that managers and analysts choose the composition of items to include versus exclude in a biased fashion (e.g., Doyle et al., 2003; Curtis et al., 2014). For example, street earnings often exclude stock-based compensation expenses, which result from central business activities and are recurring (Barth et al., 2012). These compositional concerns are compounded by concerns over selection biases stemming from analysts' and managers' choices about the firms and fiscal periods for which earnings are modified.

This study addresses three sets of questions designed to enhance financial economists' understanding of earnings' properties and their relation to future performance and stock returns. First, how economically significant (e.g., incidence and magnitudes) are non-core earnings items and how are they disclosed? Second, how can researchers systematically and impartially measure core earnings in large samples, and how do core earnings relate to future performance? Finally, do market participants understand and impound the distinction between core and non-core earnings in a timely fashion?

In studying these questions, a practical challenge arises from attempting to comprehensively identify revenues, expenses, gains, or losses stemming from transitory shocks or ancillary business activities. Doing so for one firm requires identifying and categorizing items disclosed in the footnotes, management discussion and analysis (MD&A), and cash flow statement sections of firms' 10-Ks, which have grown in length (often exceeding 200 pages) and complexity (Loughran and McDonald, 2014). Moreover, correctly categorizing items as core versus non-core is highly context-specific (e.g., it depends on a firm's primary business) and requires judgment. Therefore, measuring core earnings is challenging to scale in the cross-section and over time, and represents a critical hurdle for large-sample studies.

We address these challenges by leveraging data compiled by New Constructs (NC), a financial research firm that identifies and classifies all income-statement-related quantitative disclosures appearing in the 10-K. The data are available for a large sample, covering more than 60,000 firm-year observations from 1998 to 2017. Moreover, NC collects detailed attributes of each quantitative disclosure, allowing us to observe the frequencies and amounts of non-core earnings items based on their: (i) location of disclosure within the 10-K (e.g., on the face of the income statement, or in the footnotes, MD&A, or cash flow statement and then aggregated into an income-statement line item); (ii) direction of impact on core earnings (e.g., income-increasing or income-decreasing); and (iii) economic category (e.g., acquisition- or restructuring-related).

To measure core earnings, we exclude from GAAP earnings the items NC deems to have resulted from transitory shocks or ancillary business activities. Specifically, our measure (*Core Earnings*) adds back to GAAP earnings (what we refer to as *Net Income*) net expenses stemming from (1) acquisitions, (2) currency fluctuations, (3) discontinued operations, (4) legal or regulatory events, (5) pension plans, (6) restructuring, (7) gains and losses that companies label as "other" as a separate line item on the income statement, and (8) other gains and losses that NC analysts classify as transitory or ancillary to the central activities. Because an independent research firm produces the underlying data, our measure's key appeal is that the classification of earnings components is less likely to exhibit systematic biases found in street earnings or pro-forma earnings.

Our first set of analyses highlight the frequency, magnitude, disclosure location, and time trend of the adjustments that reconcile *Net Income* and *Core Earnings*. We find that all firms disclose non-core earnings items at some point, and they are significant in terms of frequency and magnitude. There are many such disclosures in a 10-K, and increasingly so over the last 20 years: from 1998 to 2017, the average number of non-core earnings items identified in a 10-K rose more than 30%, from six to eight. The average total non-core earnings items identified amounts to 19% of average *Net Income*. Moreover, disclosures of non-core earnings items are dispersed throughout the 10-K, both on and off of the face of the income statement (e.g., in footnotes, MD&A, or cash flow statement). Roughly half of these items, by frequency or magnitude, are disclosed off of the income statement. These findings suggest that individuals seeking to understand the composition of GAAP earnings need to process a large amount of information disclosed in various parts of the 10-K.

Our second set of tests examines the forecasting properties of *Core Earnings*. We begin by examining the persistence properties of *Core Earnings* and *Total Adjustments* (the difference between *Core Earnings* and *Net Income*). By definition, core earnings removes items that result from transitory shocks or ancillary business activities from GAAP earnings. We conceptualize these exclusions as those earnings components that, on a scale-adjusted basis, are non-recurring either in the short-run (i.e., purely transitory shocks) or over a longer horizon (i.e., ancillary business activities). Under this framing, non-core earnings items are less likely to persist or scale with fluctuations in the size of the business, and a good core earnings per share measure would distinguish the recurring and non-recurring components of GAAP earnings per share. We show that *Core Earnings* satisfies two key properties: (i) it exhibits a high level of year-over-year persistence, in particular higher than *Net Income* (due to the removal of transitory components of GAAP earnings); and (ii) its adjustments (*Total Adjustments*) exhibits a relatively low degree of year-over-year persistence.[1] Moreover, *Core Earnings* is effective at distinguishing these components of earnings over a five-year horizon.

[1] These results hold whether our core earnings measure is scaled by shares outstanding or total assets.

We also show, consistent with theoretical predictions, that *Core Earnings* offers strong predictive power for firms' *Net Income*, both independently and incrementally to commonly used alternative performance metrics, over a one- to five-year horizon. In addition, *Core Earnings* forecasts other measures of future performance relevant for managers and analysts, such as cash flow from operations, Compustat-defined income-before special items (*IBSPI*), "operating income after depreciation" (*OIADP*), operating income (*OPE*), and street earnings. Finally, we show that the predictive power of *Core Earnings* is attributable to non-core earnings adjustments stemming from on and off the face of the income statement, as well as from a broad set of economic categories. These findings highlight the importance of distinguishing the core and non-core components of GAAP earnings for understanding current and forecasting future performance.

Finally, we study whether and to what extent market participants understand the implications of the non-core components of *Net Income*. We do so by analyzing the predictive power of the non-core earnings adjustments made to *Net Income* (*Total Adjustments*) for future revisions in sell-side analysts' earnings forecasts and firms' stock returns.

Our evidence suggests that market participants are slow to take into account the implications of non-core earnings. We find that *Total Adjustments* positively forecasts revisions in analysts' earnings forecasts in the 12 months following a firm's 10-K filing. Economic and statistical significance are largest for adjustments found in the footnotes, where information tends to be less salient and less structured. These findings are consistent with analysts relying on a subset of adjustments that require lower processing costs in making initial earnings forecasts, but gradually updating forecasts over time.

Strikingly, *Total Adjustments* also significantly forecasts firms' stock returns in the 12 months following their 10-K filing, even after controlling for characteristics known to explain the cross-section of future returns and other non-core earnings proxies. In line with our analyst-based tests, the economic and statistical significance of return-predictive ability is largest for adjustments found in the footnotes. A value-weighted trading strategy that buys firms in the highest decile of *Total Adjustments* and sells firms in the lowest decile produces monthly excess returns of 66 bps per month (8.2% annualized), suggesting that the predictably gradual assimilation of core earnings information into prices applies broadly and is unlikely to be limited to smaller firms.

Collectively, our findings provide three main contributions. First, in documenting the frequency, magnitudes, and varied disclosure location in the 10-K of non-core earnings items, our findings highlight the importance of financial statement analysis. Moreover, our findings underscore the usefulness of the information disclosed off of the income statement (in footnotes, MD&A, or cash flow statement sections of 10-Ks) for understanding the nuances in earnings. These findings complement evidence in Bushman et al. (2016) and Nallareddy et al. (2020), which show that temporal changes in GAAP earnings properties have weakened their ability to forecast firms' future performance. Our results provide direct evidence supporting a prominent explanation posited by Bushman et al. (2016) that the changing nature of GAAP earnings is at least in part driven by the growth of one-time items and non-operating items. Our findings also highlight the practical difficulty of measuring core earnings in large samples and point to growing data collection costs as a potential impediment to the timely reflection of earnings information in analysts' forecasts and market prices.

Our paper's second key contribution is analyzing a systematic large-sample approach for measuring firms' core earnings. Our measure is empirically distinct from commonly used alternatives and is less likely to be susceptible to compositional and selection biases found in analysts' and managerial estimates. These data allow for quantifying the magnitude of non-core earnings and identifying where firms disclose them in their financial statements. By distinguishing between the core and non-core components of net income, this novel measure facilitates future performance forecasting.

Finally, our findings contribute new evidence on the relation between earnings and stock returns (e.g., Abarbanell and Bernard, 1992; Chan et al., 2006; Fama and French, 2006; Da and Warachka, 2011) by showing that analysts and investors inefficiently incorporate the implications of the distinction between core and non-core earnings.[2] Our findings suggest that the earnings-returns relation depends crucially on the measure of earnings used to reflect firms' economic profitability (e.g., Dechow and Ge, 2006; Novy-Marx, 2013; Ball et al., 2015) and underscore the importance of adjusting GAAP earnings to account for non-core earnings items for forecasting and valuation.

This paper proceeds as follows. Section 2 provides background and describes the data. Section 3 reports summary statistics and the temporal properties of *Core Earnings* and firms' disclosures of non-core earnings items in 10-Ks. Section 4 provides empirical validation tests of *Core Earnings*. Section 5 examines the market processing of non-core earnings. Section 6 concludes.

2. Background and data

In this section, we discuss the related research, details our measurement of core earnings, and describes the data used in our main tests.

2.1. Challenges with measuring core earnings

Manually measuring a firm's core earnings can be challenging and time-consuming. It involves adjusting GAAP

[2] Prior studies provide mixed evidence on whether market prices reflect the implications of transitory earnings in a timely fashion. For example, while Curtis et al. (2014) provides evidence that a large subset of firms opportunistically uses transitory items in non-GAAP earnings, Doyle et al. (2003) finds that investors do not fully appreciate bias in the exclusions made by managers. By contrast, Gu and Chen (2004) suggests that investors do understand the implications of the items excluded from street earnings. Our analysis is distinct in that we introduce a measure of core earnings whose exclusions from GAAP earnings are more likely to be comprehensive and less likely to be subject to bias. Moreover, our return-prediction results control for the alternative measures of transitory earnings analyzed in these prior studies.

earnings for the earnings items (gains and losses) that result from either transitory shocks or ancillary business activities (what we refer to as non-core earnings items). Because the quantitative information relevant for these adjustments can be disclosed on and off the face of the income statement, comprehensively identifying non-core earnings items for one firm requires combing through (typically) hundreds of pages of the 10-K, which has grown in length and complexity over time (Li, 2008; Loughran and McDonald, 2014; Dyer et al., 2017).

Relying exclusively on computers to automatically process 10-Ks and identify non-core earnings items on a large scale engenders both semantic and structural challenges. The semantic challenges stem from firms' use of different terminology to describe similar economic events. For example, the sale of property may be described as "Gains from sales of property," "(Gain) loss on used rental equipment," "Gains/losses on investments," or otherwise. The structural challenge stems from the various sections in which non-core items can be disclosed: as a specific line item on the income statement, or grouped with other revenues and expenses in an aggregated line item and separately disclosed in the footnotes, the MD&A, or the cash flow statement. Moreover, these practices can vary across firms and even across 10-Ks for the same firm over time.

2.2. Data

To overcome practical challenges associated with measuring core earnings for a large sample of firms, we leverage the database compiled by New Constructs (NC), a financial research technology firm. NC was founded with the primary objective of helping investors assess firms' economic earnings (net operating profit after tax in excess of a capital charge) and return on invested capital (ROIC) to facilitate the analyses of intrinsic and market valuations. The computations of these measures involve a complex set of adjustments to the balance sheet and income statement, such as capitalizing off-balance-sheet operating lease obligations [similar to, for example, McKinsey & Company et al. (2010)].

To facilitate data collection and classification efforts, NC designed a process that combines the intelligence and judgment of a human analyst with the processing power of machines. The starting point was a team of analysts who carefully identified all relevant quantitative disclosures and exercised consistent judgment regarding their classification.

Most relevant to this study, as part of its data collection efforts, NC analysts classified into separate categories income statement items deemed to have resulted from transitory shocks or ancillary business activities. To ensure the consistency of classification decisions, NC maintains a shared knowledge base through a training program in finance and accounting that all new analysts must pass.[3] It also promotes a culture of open discussion and idea exchange among analysts, particularly regarding the classification of novel quantitative disclosures. NC also maintains a private internal wiki that documents and explains the rationale behind classification decision rules on various types of quantitative disclosures.

To speed and scale up its analysts' efforts, NC developed three technological tools. The first is an internal application that allows analysts to locate, tag, and mark up all relevant quantitative data points from financial statements, footnotes, and the MD&A. This tool facilitates collecting various attributes of each disclosure, including the surrounding text, data value, units, and specific location in the filing. The second is a taxonomy that allows analysts to assign each collected quantitative number to the appropriate category to facilitate the computation of economic earnings and ROIC. The last is an automation technology, a machine-learning algorithm that learns over time to mimic the collection and classification decisions made by human analysts. When the human analyst classifies certain data points into the same bucket enough times, the machine can learn this pattern and execute it automatically. Whenever the machine comes across a quantitative disclosure that it has not seen an analyst classify in the past, it notifies a human analyst who subsequently tags, marks up, and classifies the disclosure. Analysts' accumulated choices constitute an ever-growing training data set from which machines learn to improve their ability to collect and classify quantitative information disclosed in 10-Ks automatically.

It is worth emphasizing that NC's use of machine learning was not meant to alter or improve analysts' decisions, but rather to mimic them. Most relevant to this paper, NC's machine learning algorithm did not optimize the classification of non-core earnings items, for example, based on their historical or realized statistical properties. Instead, the machine learned and replicated human analysts' judgments based on their prior decisions. It did so with greater speed and scale to produce a database covering a broad cross-section of firms.

From its database, NC provided to us the non-core earnings items summarized in various categories of "adjustments" for Russell 3000 firms from 1998 to 2017.[4] Although NC has an extensive protocol to assure the quality of the data collection and classification decisions, we conducted two quality checks on the data.[5] First, to provide a detailed quality assessment, we hand-checked a sample of roughly 350 unique specific non-core earnings items NC identified. We compared the name of the item and the value of that item to what was reported in the 10-K. In 100% of instances, we perfectly matched the description, value, and disclosure location of that item in the 10-K.

[3] New analysts are trained on principles covered in *Valuation: Measuring and Managing the Value of Companies* by McKinsey & Company et al. (2010), *Creating Shareholder Value* by Rappaport (1998), *The Quest For Value* by Stewart (1991), and *Expectations Investing* by Rappaport and Mauboussin (2001).

[4] Some of the early parts of the data were parsed at a later time. To mitigate concerns about potential look-ahead bias, the Online Appendix (Tables OA.3–OA.5) shows that the main inferences are unchanged using a subsample that begins after 2007. The data were parsed and classified on a real-time going-forward basis (with no back-filling) from 2008.

[5] For more details on the data collection and quality assurance processes employed by NC, see Wang and Thomas (2018), which was written for class discussion purposes and based on non-public information, including interviews with the organization.

Second, for a broader assessment of quality, we compared the similarity in net income—a field that is not subject to analysts' classification discretion—as reported by NC and Compustat. We find a correlation of 99% between the two datasets.

2.3. *Defining* core earnings

By definition, core earnings removes items from transitory shocks or ancillary business activities from *Net Income*. We conceptualize the former as those earnings items that, on a scale-adjusted basis, are non-recurring in the short-run and the latter as those earnings items that are non-recurring over a longer horizon. Under this framing, non-core earnings items are less likely to persist or scale with fluctuations in the size of the business. To empirically capture this concept, we utilize NC's data and adjust GAAP net income for revenues, expenses, gains, and losses identified by NC analysts that fit our definition as being non-core components of earnings. These adjustments fall within eight main economic categories of adjustments, detailed below.[6]

Net Acquisition Expenses is the total losses minus gains from acquisitions or sales of assets. An example is Yahoo's net gain of $4.4 billion in 2012 from selling its Alibaba shares.

Net Currency Expenses is the total losses minus gains from currency devaluations or revaluations. An example is Tesla's foreign-currency-exchange gain of $12 million in 2013 due to the weakening Japanese yen, which decreased Tesla's yen-denominated liabilities.

Net Discontinued Ops Expenses is the total losses minus gains from discontinued operations. An example is Pfizer's 2012 sale of its nutrition business to Nestlé, which resulted in $5.1 billion of revenue.

Net Legal Expenses is the total losses minus gains arising from legal or regulatory events. An example is Nautilus Group's $18 million legal settlement in 2017.

Net Pension Adjustments consists of all net non-service-cost items included in a firm's net period benefit-cost—the total cost expensed for a firm's pension or post-retirement plans—minus any service income (negative service costs).[7] An example is the Accenture 2017 pension settlement charge of $510 million. Thus, the only pension and post-retirement plan items included in *Core Earnings* are service costs and amortization of prior service costs.

Net Company-Defined Other Expenses are net losses that the company reports as "other" on the income statement. Items included in this category are those for which the company provides no additional information in the 10-K about the underlying event or transaction.

Finally, *Net Other Expenses* is a catch-all category capturing all other non-core earnings items. It largely consists of amortization of capitalized interest, unrealized gains or losses related to derivatives and unconsolidated subsidiaries, and real-estate revaluations. It also includes items that adjust for changes in accounting treatments to make the measure comparable over time, in particular, goodwill amortization and employee stock options expenses.[8]

Some of the items in each category are reported on a pre-tax basis, while others are reported on an after-tax basis, and they are separately reported by category in the data. To standardize all the adjustments, we estimate and apply an effective tax rate to all pre-tax non-core gains or expenses before aggregating them into the respective categories. We compute the effective tax rate as the ratio of pre-tax income and GAAP net income, and winsorize the measure at 0 and 1. For firms with missing values, we apply the statutory rate of 35%.[9] Using the after-tax adjustments in each economic category, we construct:

$$\begin{aligned} \textit{Core Earnings}_{i,t} &= \textit{Net Income}_{i,t} \\ &\quad + \textit{Total Adjustments}_{i,t}, \qquad (1) \\ \text{where } \textit{Total Adjustments}_{i,t} &= \textit{Net Acquisition Expenses}_{i,t} \\ &\quad + \textit{Net Currency Expenses}_{i,t} \\ &\quad + \textit{Net Discontinued Ops Expenses}_{i,t} \\ &\quad + \textit{Net Legal Expenses}_{i,t} \\ &\quad + \textit{Net Pension Adjustments}_{i,t} \\ &\quad + \textit{Net Restructuring Expenses}_{i,t} \\ &\quad + \textit{Net Company-Defined Other Expenses}_{i,t} \\ &\quad + \textit{Net Other Expenses}_{i,t}. \end{aligned}$$

Our data also provide a decomposition of *Total Adjustments* based on the location of disclosure in the 10-K. *Total Adjustments from IS* consists of all net non-core expenses disclosed on the face of the income statement. *Total Adjustments from FN* (*Total Adjustments from MD&A*) consists of

[6] Based on our conceptualization, financing activities and tax consequences of central business activities can belong to core earnings. Thus, while NC analysts also identify interest expense from debt obligations or leases as "non-operating," we do not include these categories in non-core earnings adjustments.

[7] Non-service-cost items include interest cost (increases in the obligation due to the passage of time), expected return on plan assets (typically a credit for deferred expected realized returns on plan assets), settlements and curtailments (non-recurring charges that lower the obligation due to payouts or changes in plan terms), and amortization of actuarial gains or losses (charges that reflect changes in assumptions to explain changes in benefit obligations, amortized from other comprehensive income over time).NC's classification treats all net period benefit cost components outside of service cost or amortization of prior service costs as stemming from ancillary activities. This treatment is largely consistent with GAAP's accounting treatment of these pension components. Specifically, FASB's pension accounting standards update in 2017 (ASC 715-30) requires firms to report all but the service cost components of net period pension cost as part of the line item "other income/(expense)" in the income statement.

[8] Before the update of FAS 142 in 2002, companies amortized goodwill annually. Since 2002, companies are no longer required to amortize goodwill annually but are instead subject to an impairment standard. For all firm-years before the rule change, *Net Other Expenses* includes goodwill amortization expense. After 2002, *Net Other Expenses* includes goodwill impairment expense. Similarly, before the update of FAS 123 in 2006, companies were not required to expense stock options. Before 2006, *Core Earnings* are adjusted to reflect the expensing of stock options using data culled from footnote disclosures.

[9] In the Online Appendix (Tables OA.3–OA.5), we show that our main results are robust to two alternative tax rate assumptions: a flat statutory rate of 35% applied to all firms and firms' cash effective tax rates computed following Dyreng et al. (2008).

net non-core expenses disclosed in the footnotes (MD&A) and not in the income statement. If an item is disclosed in both the footnotes and the MD&A (an uncommon occurrence), it is classified in the location where an analyst deems the information more comprehensively explained (typically footnotes). Finally, *Total Adjustments from CF* consists of net non-core expenses that are disclosed only in the cash flow statement.[10] Our empirical examination of *Core Earnings* analyzes the information content of *Total Adjustments* and its location and economic sub-components.

2.4. Alternative core earnings measures

Commonly used academic databases offer alternative metrics that could approximate core earnings for the cross-section of firms. For example, researchers commonly use Compustat-defined adjusted income metrics, such as *IBSPI* (e.g., Bradshaw and Sloan, 2002; Burgstahler et al., 2002), *OIADP* (Bushman et al., 2016), and *OPE* (Doyle et al., 2013) (the definition of each metric is in the Appendix). Also, Compustat collects "special" items from economic categories similar to NC's eight non-core earnings types.[11] As we explain below, differences across these measures likely stem from two main sources: differences in (i) the economic categories of disclosures that data providers collect, and (ii) the data collection rules that data providers apply, even when holding constant the economic category of interest.

Fully reconciling the differences between Compustat's and NC's data collection and classification schemes is beyond this paper's scope because we do not observe the providers' processes and protocols. Nevertheless, to characterize these differences, we first show statistically that *Total Adjustments* differs significantly from the items identified and excluded from Compustat's adjusted earnings measures. For example, our Online Appendix (Table OA.1) shows that about 50% to 70% of the variation in *Total Adjustments* is not explained by *IBSPI Adjustments, OIADP Adjustments*, or *OPE Adjustments* individually. Moreover, larger values of non-core earnings (either by economic or location categories) identified in the NC data correspond to larger absolute differences between NC and Compustat adjustments, consistent with systematic differences in data collection protocol or quality.

We also studied several examples and, through extensive conversations with S&P Global's Client Services team, identified three sources of systematic differences between NC and Compustat data. The first stems from how the data providers classify specific economic events, such as actuarial gains and losses or mark-to-market gains and losses on defined benefit plans. Firms aggregate these pension-related items in an operating expenses line item on the income statement, and Compustat typically does not exclude them from their adjusted earnings measures. For example, in 2012, UPS disclosed in the MD&A a mark-to-market loss of $4.831 billion from its defined benefit plan, which is aggregated as a part of the "Compensation and benefits" expense line item on the income statement. Compustat included this loss as part of its "Cost of Goods Sold" (*COGS*) field, and thus it is included in *IBSPI, OIADP*, and *OPE*. Because NC identifies all net non-service cost items as non-core, this loss is excluded from *Core Earnings*.[12]

The second type of difference stems from classification rules. One example is the "majority rule" that, until recently, was used to determine the contents of Compustat's "special items" (*SPI*) field. The rule states that if a Compustat analyst cannot determine which income statement line an item is aggregated into for a (dollar value) majority of the identified non-recurring items, then no values are recorded for the *SPI* field (or its relevant sub-components). For example, Compustat analysts identified a total of $11.9 billion of non-recurring items in Ford Motor Company's 2006 10-K footnotes. Because analysts could not identify where $8.1 billion (68% = $8.1/$11.9) of these items were included in the income statement (i.e., the specific line items), the *SPI* field, as well as the economic categories related to its calculation such as write-downs (e.g., *WDA*), was left blank. Consequently, *IBSPI* and *OIADP* do not fully adjust for these items. However, the majority rule does not impact the calculation of *OPEPS*, which excludes the $11.9 billion.[13] No such rule affects NC's data, which classifies the full $11.9 billion as non-core.

Another example is the "three-year rule" for determining whether an item is non-recurring. To illustrate the rule, consider General Motors (GM), which disclosed impairment charges related to property in its footnote from 2011 to 2013. These charges were included in various operating income line items on the income statement, and their magnitudes varied significantly (e.g., $81 million in 2011 and $3.8 billion in 2012). In 2011 and 2012, Compustat analysts classified these impairments as special items (part of *SPI*) and excluded them from *IBSPI, OIADP*, and *OPE*. However, in 2013 GM recorded another impairment charge related to property ($901 million). Because this impairment appeared for three consecutive years, triggering the three-year rule, Compustat deemed the 2013 amount as recurring. Compustat does not include the amount in *SPI*—or the economic categories related to its calculation such as restructuring (e.g., *RCA*)—and leaves the charge as part of GM's 2013 *COGS, IBSPI, OIADP*, and *OPE*. Moreover, the rule also deems as recurring the 2011 and 2012 amounts, which are retroactively moved from GM's 2011 and 2012

[10] One example is Coca-Cola in 2017, which disclosed $1.459 million from "Significant (gains) losses on sales of assets" in its cash flow from operations but not elsewhere in the 10-K.

[11] The categories collected by Compustat are write-downs (*WDA*), legal and insurance settlements (*SETA*), restructuring costs (*RCA*), gains/losses (*GLA*), impairment of goodwill (*GDWLIA*), acquisitions/mergers (*AQA*), in-process R&D expense (*RDIA*), debt extinguishments (*DTEA*), non-recurring income taxes (*NRTXT*), and other special items (*SPIOA*). These fields are reported on an after-tax basis, and Compustat also reports similar fields on a per share basis or a pre-tax basis.

[12] We identified similar examples of pension charges for FedEx, Honeywell, Boeing, Verizon, and AT&T, all of which included charges of more than $500 million, and all of which were categorized as operating expenses by both the firm and Compustat but excluded from *Core Earnings*.

[13] Compustat has stopped using the majority rule, although the S&P Global Client Services members we communicated with could not identify the exact year when the rule ceased to be in effect. In our correspondences, an analyst said the rule began being phased out "a few years" after 2006 and was unlikely to be applied after 2013. Compustat did not back-fill data for conformity after it stopped using the rule.

SPI to the respective year's *COGS, IBSPI, OIADP*, and *OPE*. The three-year rule, which is still in effect, illustrates a source of hindsight bias in Compustat data and an important difference in classification protocol—NC does not use such a rule and identifies all of GM's charges from 2011 to 2013 as non-core.

A final source of differences is due to data collection oversights. Our examination suggests that, in general, Compustat does a thorough job identifying and collecting income-statement-related data points disclosed in the 10-K. Nevertheless, we identified cases where Compustat did not collect information relating to firms' income that is useful in assessing core earnings. An example is YUM Brands, which disclosed in 2005 "Store Impairment Charges" of $62 million in the footnotes. This value was rolled up on the income statement into a "Facility Actions" operating expense line item totaling $19 million. Compustat did not collect the $62 million impairment charge and included the entire $19 million "Facility Actions" expense in its *SG&A* field as well as in *IBSPI, OIADP*, and *OPE*. NC identified the $62 million and classified it as a non-core expense.

Researchers also frequently use street earnings reported by IBES, which has been extensively studied. Street earnings can systematically differ from *Core Earnings* both because of sample coverage and the nature of the adjustments. Street earnings data are limited to the subset of firms with analyst coverage. Also, street earnings adjustments are not necessarily complete or comparable across firms. Prior research suggests they can systematically exclude certain operating and recurring items such as stock compensation expense (Barth et al., 2012) and may be biased due to managerial incentives.[14]

Although we explain why our data measure can differ significantly, and potentially offer improvement upon, commonly used adjusted earnings measures, it is ultimately an empirical question to what extent *Core Earnings* and *Total Adjustments* provide incremental information for forecasting purposes. For example, other data providers' classification rules could be more relevant, or NC data could embed some oversights. Therefore, to establish incrementality, our analyses of forecasting properties below includes Compustat or IBES adjusted earnings measures as controls.

3. Summary statistics and time series trends

In this section, we characterize the adjustments that separate *Net Income* and *Core Earnings*. In doing so, we show that these adjustments are frequent, economically large, dispersed across sections of firms' 10-Ks, and growing over time.

[14] Bentley et al. (2018) finds that, for a large majority of firms, manager-reported non-GAAP earnings are identical to the street earnings reported in IBES, which suggests general agreement between analysts and managers on how to adjust GAAP earnings to reflect core operating performance. This consensus raises the possibility that managerial bias that could be reflected in pro forma earnings (Curtis et al., 2014) is also reflected in street earnings, for which Doyle et al. (2013) provides empirical evidence.

We begin by examining to what extent firms disclose non-core earnings items over their histories and, when they do, the frequency and magnitude of these disclosures. For comparability, we report summary statistics using the sample of 60,135 observations and 5088 unique firms for which we have non-missing *Core Earnings* and Compustat adjusted earnings measures examined in our analyses (*IBSPI, OIADP*, and *OPE*).

In Table 1, Panel A, we examine the likelihood of observing a non-core earnings item in a given firm over its history in our 20-year sample. For each of the 5088 firms, we compute and summarize indicator variables for the presence of non-core earnings disclosures overall ($\mathbb{I}$[*All Adjustments* over Firm History]), on the face of the income statement ($\mathbb{I}$[*On IS over Firm History*]), off of the income statement ($\mathbb{I}$[*Off IS over Firm History*], in the MD&A ($\mathbb{I}$[*MD&A over Firm History*]), in the footnotes ($\mathbb{I}$[*FN over Firm History*]), and in the cash flow statement ($\mathbb{I}$[*CF over Firm History*]).

Our results in Table 1 suggest that nearly all firms disclose non-core earnings items at some point in their history, both on and off the income statement. More than 99% of firms disclose non-core earnings items over our sample period. Similarly, more than 99% disclose one such item on the face of their income statement. Further, 83% disclose a non-core earnings item off of the income statement over their histories, either in the footnotes (72%), the MD&A (55%), or the cash flow statement (60%) sections of their 10-Ks.

In Table 1, Panel B, we examine the incidence and magnitudes of the various categories (location, economic type, and direction) of disclosed non-core earnings items. When they are disclosed, firms report numerous non-core earnings items on and off the face of the income statement. On average, there are 4.0 such items on the face of the income statement and 4.6 off the income statement. Similarly, net non-core earnings items reported on the face of the income statement are similar in magnitude (on average $19 million when a firm discloses one such item) to those reported off the income statement (on average $23 million when a firm discloses one such item). Among the latter, MD&A and footnote disclosures are more economically significant than those from the cash flow statement. Given the substantial lower frequency of non-core earnings disclosures in the MD&A, these summary statistics suggest that such disclosures in the MD&A tend to involve large losses.

Panel B also shows that, among the different economic categories of non-core earnings items, the most common are restructuring-related: 41,869 firm-year observations (70% of the sample) report a non-core earnings item relating to restructuring activities. By contrast, the least typical non-core earnings items stem from legal or regulatory events (9% of the sample). When a firm discloses a non-core earnings item of a particular economic category, we observe, on average, only one such disclosure. Notable exceptions are pension and restructuring items, which average 5.8 and 2.3, respectively, among firms that disclose them. The mean values of the non-core earnings items vary significantly across categories. For example, net expenses from *Restructuring* are $36 million on av-

Table 1
Likelihood, frequency, and magnitude of non-core earnings disclosures.
This table reports descriptive statistics—non-missing-value count (N), average (Mean), median (p50), and standard deviation (SD)—for non-core earnings items disclosed in firms' 10-Ks. Panel A reports the likelihood of a non-core earnings item being disclosed by a firm over our sample period. 𝕀[*All Adjustments* over Firm History], 𝕀[*On IS* over Firm History], 𝕀[*Off IS* over Firm History], 𝕀[*MD&A* over Firm History], 𝕀[*FN* over Firm History], and 𝕀[*CF* over Firm History] are indicators equal to 1 if a firm disclosed such an item in the 10-K, on the face of the income statement, off of the income statement, in the footnotes, in the MD&A, or in the cash flow statement. Panel B reports the distributional statistics of the frequencies and magnitudes (in $ millions) of each non-core earnings adjustment type, by location or economic category, in the subsample with at least one adjustment in that category. For ease of comparison, income-increasing and income-decreasing items are summarized in absolute values. All variables reporting magnitudes are winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix.

Panel A: Likelihood of non-core earnings Items over a Firm's History

	N	Mean	p50	SD
𝕀[*All Adjustments over Firm History*]	5088	0.99	1.00	0.07
𝕀[*On IS over Firm History*]	5088	0.99	1.00	0.12
𝕀[*Off IS over Firm History*]	5088	0.83	1.00	0.38
𝕀[*FN over Firm History*]	5088	0.72	1.00	0.45
𝕀[*MD&A over Firm History*]	5088	0.55	1.00	0.50
𝕀[*CF over Firm History*]	5088	0.60	1.00	0.49

Panel B: Frequency and Magnitudes of non-core earnings Items, Adjustment Sample

		Frequency			Magnitudes		
	N	Mean	p50	SD	Mean	p50	SD
On IS	53,403	3.98	3.00	3.17	18.72	0.03	213.08
Off IS	32,525	4.55	3.00	3.90	22.83	0.89	116.72
FN	23,400	4.94	4.00	3.77	19.92	0.98	96.76
MD&A	8214	1.62	1.00	1.12	15.12	2.08	48.81
CF	15,588	1.23	1.00	0.50	3.39	0.08	19.38
Acquisition	9013	1.22	1.00	0.61	11.14	1.86	29.16
Currency	6785	1.06	1.00	0.26	3.44	0.11	21.54
Discontinued Operations	8730	1.17	1.00	0.43	−7.72	0.14	80.38
Legal or Regulatory	5,211	1.12	1.00	0.38	11.35	1.05	37.58
Pension	14,877	5.78	6.00	2.85	5.69	0.51	45.35
Restructuring	41,869	2.30	2.00	1.62	36.02	1.29	196.63
Company-Defined Other	30,599	1.05	1.00	0.25	−1.76	−0.07	22.05
Other	29,210	1.90	1.00	1.32	5.19	0.00	80.96
Income-Increasing	49,698	4.47	3.00	3.64	129.86	8.73	505.75
Income-Decreasing	45,299	3.05	2.00	2.52	85.80	4.18	342.65
All Adjustments	56,727	6.35	5.00	5.39	32.31	0.50	250.81
Net Income	56,727	–	–	–	247.62	22.22	1,135.36

erage, whereas net expenses from *Company-Defined Other* are $1.76 million on average.

Finally, Panel B shows that income-increasing (i.e., that increase *Core Earnings* relative to *Net Income*) items are more significant in terms of frequency and magnitudes than income-decreasing (i.e., that decrease *Core Earnings* relative to *Net Income*) items. On average, when they are disclosed, four income-increasing items are identified in the 10-K versus an average of three income-decreasing items. Similarly, income-increasing items on average are larger in magnitude (on average $130 million when a firm discloses one such item) than income-decreasing items (on average $86 million when a firm discloses one such item). (For ease of comparison, income-increasing and income-decreasing items are summarized in absolute values.) These patterns could be consistent with accounting conservatism. For example, US GAAP does not allow for write-ups. The greater frequency of non-core expenses is likely also attributable to the nature of business conditions. For example, unexpected sources of expenses outnumber unexpected sources of income. This tendency is reflected in the structure of the income statement, which typically provides only one line for revenue and sometimes a second line for "other income" but specifies numerous ways to spend the money that a company earns.

Table 2, Panel A, reports distributional statistics for *Core Earnings* per share and *Total Adjustments* per share for the full sample of firms, where we set the value in a particular economic category to 0 in the absence of identified non-core earnings items. For much of our empirical analysis, we measure performance on a per share basis for interpretability (e.g., because market participants are interested in earnings per share) and to account for scaling effects (e.g., Barth and Clinch, 1998; 2009). For comparison, we also report the distributional statistics of GAAP earnings (*Net Income*), other adjusted earnings measures from Compustat and IBES (*IBSPI, OIADP, OPE*, and *Street Earnings*), as well as *Cash Flow from Operations*, and their adjustments (*IBSPI Adjustments, OIADP Adjustments OPE Adjustments, Total Accruals*, and *Street Adjustments*). All variables are winsorized at the top and bottom 0.5% of the cross-sectional distribution and defined in the Appendix.

Table 2
Descriptive statistics: *Core Earnings, Total Adjustments*, and additional performance measures.
This table reports descriptive statistics—count (N), average (Mean), median (p50), and standard deviation (SD)—for the non-core earnings adjustments and our main variables of interest. Panel A reports distributional statistics on *Core Earnings, Total Adjustments, Net Income*, and additional adjusted earnings measures and their adjustments from *Net Income* for the full sample of firms. Panel B reports the summary statistics for the time series AR(1) parameter for *Net Income, Core Earnings*, and *Total Adjustments* for the subset of firms with at least 15 years of available data. Panel C reports time series distributional statistics on the cross-sectional average squared forecast errors (MSE) from forecasting one-year-ahead *Net Income*. The first two rows of this panel report the distributional statistics of MSEs using as forecasters current-period *Net Income* and *Core Earnings*; the last row reports the distributional statistics of the difference between the MSE from *Core Earnings* and the MSE from *Net Income*. All variables are scaled by shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix.

Variable	N	Mean	p50	SD
Panel A: *Core Earnings*, Non-Core Earnings, and Other Earnings Measures ($ per share)				
Core Earnings	60,026	1.0916	0.7643	2.4010
Total Adjustments	60,026	0.1786	0.0070	1.1216
Net Income	60,026	0.9560	0.7610	2.7816
IBSPI	60,026	1.1391	0.8454	2.5603
OIADP	60,026	1.4972	1.0194	2.3948
OPE	60,026	1.1030	0.8177	2.3297
Street Earnings	49,946	1.3298	1.0251	2.1933
Cash Flow from Operations	60,026	2.4084	1.6066	3.7019
IBSPI Adjustments	60,026	0.1852	0.0062	0.7267
OIADP Adjustments	60,026	0.5541	0.2088	1.7520
OPE Adjustments	60,026	0.1566	0.0041	1.1413
Street Adjustments	49,946	0.2540	0.0019	1.4875
Total Accruals	60,026	−1.4883	−0.8098	3.1687
Panel B: Persistence of Performance and Adjustment Measures				
Net Income	1768	0.4474	0.4551	0.3350
Core Earnings	1768	0.5850	0.5886	0.3151
Total Adjustments	1768	0.1656	0.1209	0.3425
Panel C: Mean Squared Errors from Forecasting *Net Income*$_{t+1}$				
Net Income	19	5.7432	4.7796	3.3416
Core Earnings	19	4.5454	3.4770	2.8952
MSE Difference	19	−1.1978	−0.6827	1.2540

Of particular interest is that, across the full sample, average non-core earnings adjustments (*Total Adjustments*) amounts to an 18 cents per share increase in a firm's *Net Income*. These magnitudes are significant: average *Total Adjustments* represents 19% of average *Net Income* and about 16% of average *Core Earnings*.

Next, we analyze the time series patterns. To facilitate comparisons across time, our analysis focuses on the subsample of 2074 unique firms for which the NC data contain their full histories back to 1998. Fig. 1 displays the average annual dollar value per share of *Total Adjustments, Core Earnings*, and *Net Income* from 1998 to 2017. All three series increased in value over time. Notably, this figure demonstrates that non-core earnings adjustments smooth out net income, consistent with these adjustments removing earnings shocks from transitory or ancillary business activities.

Figs. 2 and 3 further illustrate how non-core earnings items disclosed in the 10-K have evolved over time. Fig. 2, Panel A, shows the average number of such items was six in 1998 and increased by 33% to an average of eight in 2017. This increase is driven by adjustments identified from the face of the income statement, which averaged 2.7 in 1998 and 4.2 in 2017 (a 56% increase). Off-income-statement non-core earnings disclosures saw a more modest increase over this period, from an average of 3.3 in 1998 to 3.8 in 2017 (a 15% increase). Nevertheless, the 2017 numbers suggest that about half of the total number of non-core earnings items are reported off the face of the income statement.

Fig. 2, Panel B, shows that off-income-statement non-core earnings items are most commonly disclosed in the footnotes, which averaged 3.1 in 1998 and 2.9 in 2017 (a 6.5% decline). Interestingly, the growth of off-income-statement items is mostly due to MD&A items, increasing from an average of 0.1 in 1998 to 0.5 in 2017 (a 500% increase).

Fig. 3, Panel A, shows that the average value per share of total, on-income-statement, and off-income-statement non-core earnings adjustments have grown significantly over time. It also shows that adjustments on the income statement are much more volatile than those off the income statement. This could be consistent with large transitory shocks more likely to be disclosed on the face of the income statement. Nevertheless, the average non-core earnings values from footnotes often represent a significant percentage of total adjustments: in 11 of the 20 years in our sample, they exceed 35%. Moreover, Fig. 3, Panel B, shows that disclosures in footnotes and the MD&A drive the growth in the average value of off-income-statement non-core earnings items over our sample period. Footnotes adjustments averaged $0 per share in 1998 and $0.035

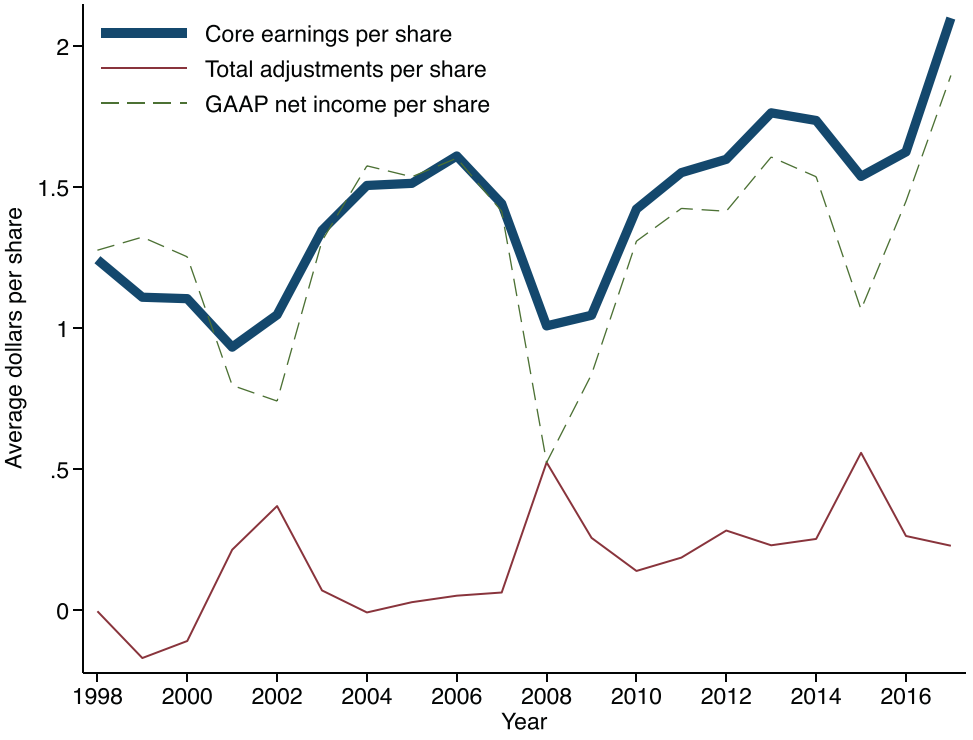

Fig. 1. Average total adjustments, GAAP earnings, and core earnings. This figure displays time series patterns in non-core earnings adjustments across the sample period. The thick line is the average core earnings per share, the dashed line is the GAAP earnings per share, and the thin line is the average total adjustments per share.

in 2017. Similarly, MD&A adjustments averaged $0.007 per share in 1998 and $0.036 in 2017.

The summary statistics presented in this section attest to the economic importance, diversity, and complexity of non-core earnings information in firms' 10-Ks. Nearly all firms disclose non-core earnings items at some point, and they often make such disclosures off the income statement. Moreover, when a firm discloses a non-core earnings item, both the total number and magnitudes of the adjustments are significant.

Taken together, our results illustrate the importance of the quantitative information disclosed off the income statement, in terms of their frequency and magnitude, and their different and evolving properties. Therefore, capturing and understanding the nature of core earnings requires the collection, synthesis, and analysis of quantitative information disclosed throughout the filings. Consequently, these findings also highlight the practical difficulty of measuring core earnings in large samples and point to growing data collection costs as a potential impediment to the timely reflection of earnings information in analysts' forecasts and market prices.

4. Forecasting properties

In this section, we examine the properties of *Core Earnings* and *Total Adjustments* in terms of forecasting the future values of itself, *Net Income*, and other performance measures.

4.1. Persistence

We begin by examining how well *Core Earnings* distinguishes between the recurring and non-recurring components of *Net Income* (all measured on a per share basis). A performance measure that effectively separates the recurring and non-recurring components of *Net Income* should display two fundamental properties. First, by removing the non-recurring components, such a measure should exhibit relatively high persistence, notably higher than that of *Net Income*. Second, the adjustments made (i.e., the difference between *Net Income* and the measure) should exhibit relatively low persistence.

The first property alone is not sufficient to assess how effectively a measure distinguishes between the recurring and non-recurring components of *Net Income*. In our sample, the cross-sectional persistence for revenues per share over a one-year horizon is 0.98 (untabulated). Clearly, revenues do not adequately reflect core earnings because they exclude components of operating profits that are persistent and part of firms' central activities. Not surprisingly, the difference between *Net Income* and revenues is also highly persistent. Similarly, the second property alone is insufficient because an ineffective core earnings measure could retain a large portion of transitory earnings items by excluding only a small subset of them from *Net Income*. In such a case, both the measure and its adjustments will exhibit relatively low persistence.

We begin with the persistence properties of *Core Earnings* over a one-year horizon. Table 2, Panel B, reports the

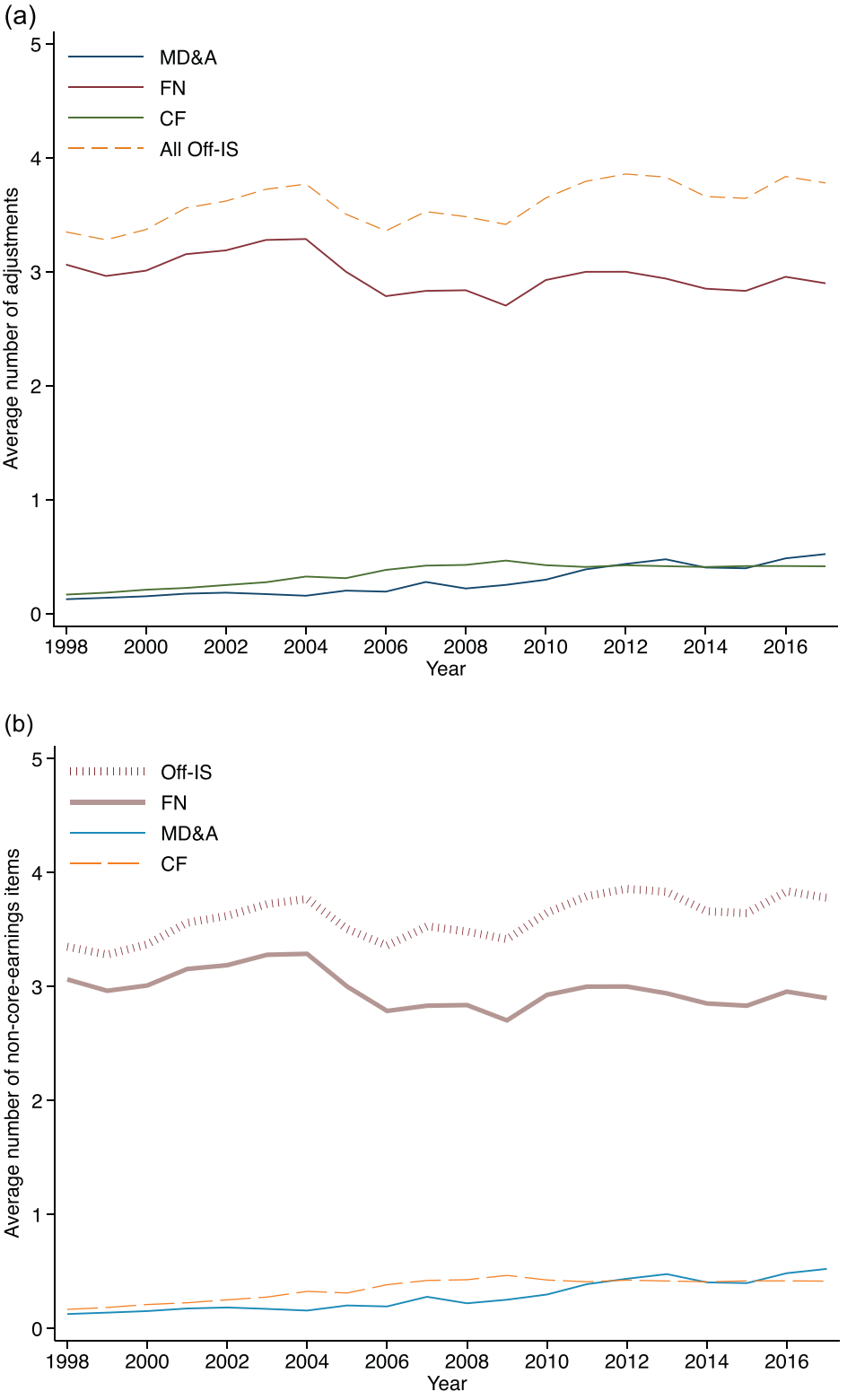

Fig. 2. Average annual number of non-core earnings adjustments by 10-K disclosure location. This figure displays time series patterns in the frequency of non-core earnings items from 1998 to 2017. Panel A shows the average number of items identified in firms' 10-Ks (Total) as well as the average number of items disclosed on (IS) and off (Off-IS) the income statement. We decompose the off income statement non-core earnings items, and Panel B displays the average number of items disclosed in the footnotes (*FN*), cash flow statement (*CF*), and MD&A sections of the 10-K. Panel A. On vs. off income statement. Panel B. Off income statement, by location.

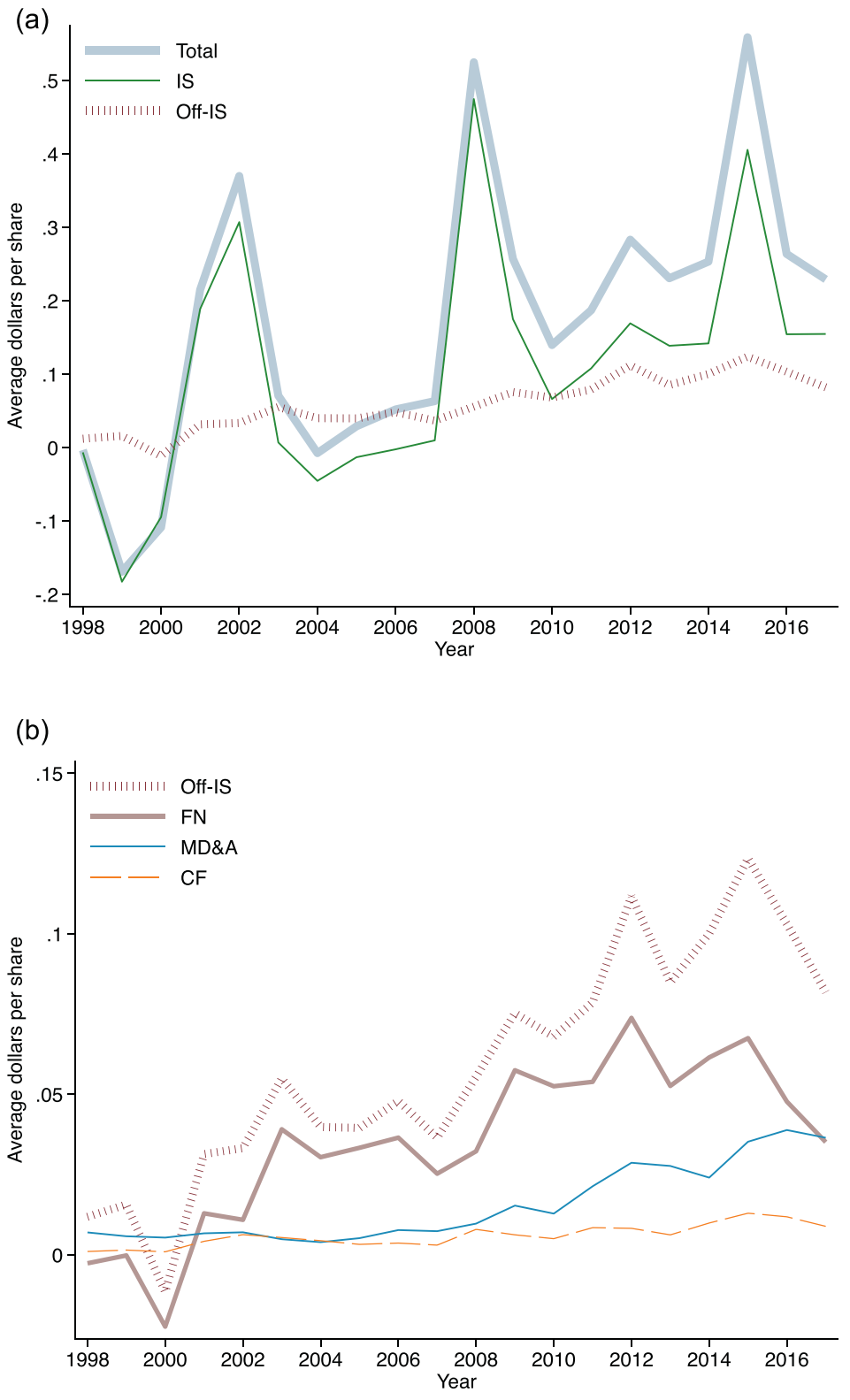

Fig. 3. Average value per share of non-core earnings adjustments by 10-K disclosure location. This figure displays time series patterns in the per share value of non-core earnings items from 1998 to 2017. Panel A shows the average per-share value of items identified in firms' 10-Ks (Total) as well as the average per-share value of items disclosed on (IS) and off (Off-IS) the income statement. Panel B decomposes off-income-statement non-core earnings items and displays the average per-share value of items disclosed in the footnotes (*FN*), cash flow statement (*CF*), and MD&A sections of the 10-K. Panel A. On vs. off income statement. Panel B. Off-income-statement, by location.

distribution of the time series AR(1) parameter for *Core Earnings* and *Total Adjustments*, estimated by regressing the one-year-ahead measure on the current-period measure at the firm level. As a benchmark, we also report the persistence of *Net Income*. Because our database consists of only 20 years of data, we use the sample of (1768) firms with at least 15 years of data to mitigate small-sample concerns.

The mean time series AR(1) parameter for *Core Earnings* (0.59) is 30% larger than for *Net Income* (0.45). Similarly, the mean AR(1) parameter for *Core Earnings* is 3.5 times as large as *Total Adjustments*, consistent with *Core Earnings* distinguishing the more and less persistent components of *Net Income*.

We next examine the cross-sectional persistence of *Core Earnings*, which is more relevant for many asset-pricing contexts. We estimate ϕ from the following regression:

$$Performance_{i,t+1} = \alpha + \phi \times Performance_{i,t} + \eta_t + \epsilon_{i,t+1}, \quad (2)$$

where η_t are year-fixed effects, and ϕ capture the extent to which differences in performance between firms in one year forecast differences in performance the following year.

Table 3, Panel A, reports a cross-sectional persistence parameter of 0.637 for *Net Income* (column 1) and 0.810 for *Core Earnings* (column 2), which is about 30% higher than *Net Income* and 4.5 times the persistence of *Total Adjustments* (0.178 in column 3). Consistent with the time series results, these results show that *Core Earnings* is effective at excluding the less persistent components of *Net Income*.

As a GAAP benchmark, columns 4 and 5 report the cross-sectional persistence of *Cash Flow from Operations* and its adjustments (*Total Accruals*). Although *Cash Flow from Operations* is relatively persistent (0.785), it is only 1.7 times as persistent as *Total Accruals*. At 0.459, *Total Accruals* is 2.6 times as persistent as *Total Adjustments*, suggesting that *Cash Flow from Operations* excludes a significant amount of persistent earnings items.

For comparison, Table 3, Panel B, reports the results of analogous tests of *IBSPI, OIADP*, and *OPE*, and their adjustments. Overall, *OIADP* exhibits the highest cross-sectional persistence (0.861), about 6% higher than *Core Earnings*. However, *OIADP* is only 1.4 times as persistent as *OIADP Adjustments*. At 0.612, *OIADP Adjustments* is nearly as persistent as *Net Income*. Like *Cash Flow from Operations, OIADP* is not particularly effective at excluding the less persistent components of *Net Income*. Both *IBSPI* and *OPE* are more effective at doing so, with *OPE*'s persistence properties being the most similar to those of *Core Earnings: Core Earnings* exhibits 3% higher persistence than *OPE*, but *Total Adjustments* is also 3% more persistent than *OPE Adjustments*. Moreover, *OPE* is about 4.5 times as persistent as *OPE Adjustments*, similar to the relation between *Core Earnings* and *Total Adjustments*. These results suggest that *Core Earnings* and *OPE* perform best in distinguishing the persistent and transitory components of *Net Income* over a one-year horizon.

We also examine the persistence properties of *Core Earnings* and other adjusted earnings measures over a longer horizon. Fig. 4 reports the ratio of persistence parameters between *Core Earnings* and *Total Adjustments* over a five-year horizon, where we estimate the T-period persistence from an equation similar to Eq. (2) but with $Performance_{i,t+T}$ as the dependent variable. We also report persistence ratios of other adjusted earnings measures for comparison.

Fig. 4 shows that the persistence ratio of *Core Earnings* is growing over the five-year horizon and is generally higher than the persistence ratio of all other adjusted earnings measures. In year five, for example, *Core Earnings* continues to exhibit substantially higher persistence than *Net Income* (0.64 vs. 0.46 or 30% higher), while the persistence of *Total Adjustments* is only 0.04, the lowest among all the adjustments considered. The diminishing persistence of *Total Adjustments* suggests that certain components of non-core earnings, such as those gains or losses that are not a part of central activities, could exhibit some degree of recurrence in the short run but diminishingly so over a longer horizon. Our evidence overall suggests that *Core Earnings* is effective at excluding non-recurring components of earnings, which we show below aids in forecasting future performance.

4.2. Forecasting future performance

Next, we examine whether *Core Earnings* contains incremental information about firms' future performance. A measure that effectively distinguishes the persistent and transitory components of *Net Income* should, in theory, help to forecast future *Net Income*. To see this, consider the following stylized model of earnings (e_t), which contains a persistent (z_t) and a transitory (v_t) component:

$$e_{t+1} = z_{t+1} + v_{t+1}, \text{ and}$$
$$z_{t+1} = z_t + u_{t+1},$$

where u_{t+1} and v_{t+1} are iid and mean-zero innovations with finite variances. This implies only the persistent component of current period earnings is relevant for forecasting future earnings: $e_{t+1} = z_t + u_{t+1} + v_{t+1}$.

Isolating the persistent component of e_t should therefore improve upon its forecasting power for e_{t+1}. However, in general, the ability to exclude the transitory portions of earnings need not be the only property that could lead to greater predictive power for future earnings. Other relevant properties include the ability to distinguish the influence of earnings management or identify longer-term strategic changes, which are outside the scope of our analyses.

To assess how well *Core Earnings* forecasts future *Net Income*, Panel C of Table 2 reports the cross-sectional mean squared errors (MSE) from forecasting one-year-ahead *Net Income* using current period *Net Income* and current period *Core Earnings*. Our results show the time series average MSE produced by *Core Earnings* is 20% lower than that produced by *Net Income*, that is *Core Earnings* is a significantly better forecaster of future *Net Income* than current-period *Net Income*.

For a more general assessment of the incremental forecasting ability of *Core Earnings* for one-year-ahead *Net Income*, we report in Table 4, column 1, the results from estimating the following equation using multivariate OLS:

Table 3
Cross-sectional persistence of performance measures and their adjustments.
This table reports the OLS estimation results from regressing a measure of performance (or their adjustments of *Net Income*) from the next fiscal year on the same measure for the current fiscal year, following Eq. (2). In Panel A, the measures are *Net Income* (column 1), *Core Earnings* (column 2), *Total Adjustments* (column 3), *Cash Flow from Operations* (column 4), *Total Accruals* (column 5). In Panel B, the measures are *IBSPI* (column 1), *IBSPI Adjustments* (column 2), *OIADP* (column 3), *OIADP Adjustments* (column 4), *OPE* (column 5), and *OPE Adjustments* (column 6). All variables are scaled by total shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

Panel A: *Core Earnings* and *Total Adjustments* vs. GAAP performance measures

	(1)	(2)	(3)	(4)	(5)
Net Income	0.6366***				
	(0.043)				
Core Earnings		0.8100***			
		(0.028)			
Total Adjustments			0.1780***		
			(0.027)		
Cash Flow from Operations				0.7845***	
				(0.021)	
Total Accruals					0.4585***
					(0.040)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	54,228	54,228	54,228	54,228	54,228
Adjusted R^2	0.3879	0.6075	0.0586	0.5991	0.2211

Panel B: Alternative performance measures and their adjustments

	(1)	(2)	(3)	(4)	(5)	(6)
IBSPI	0.7499***					
	(0.028)					
IBSPI Adjustments		0.1898***				
		(0.040)				
OIADP			0.8612***			
			(0.024)			
OIADP Adjustments				0.6121***		
				(0.051)		
OPE					0.7853***	
					(0.028)	
OPE Adjustments						0.1734***
						(0.028)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54,228	54,228	54,228	54,228	54,228	54,228
Adjusted R^2	0.5218	0.0546	0.7304	0.3701	0.5865	0.0421

$$\begin{aligned} \textit{Net Income}_{i,t+1} = {} & \gamma_0 + \gamma_{AE} \times \textit{Core Earnings}_{i,t} \\ & + \gamma_{NI} \times \textit{Net Income}_{i,t} + \gamma_{CFO} \\ & \times \textit{Cash Flow from Operations}_{i,t} \\ & + \gamma_{IBSPI} \times \textit{IBSPI}_{i,t} + \gamma_{OIADP} \times \textit{OIADP}_{i,t} \\ & + \gamma_{OPE} \times \textit{OPE}_{i,t} + \eta_t + \epsilon_{i,t+1}, \end{aligned} \quad (3)$$

where η_t are year-fixed effects as before. Our results in Table 4 show that *Core Earnings* contains information for future *Net Income* that is incremental to contemporaneous *Net Income*, as well as other adjusted earnings measures. The coefficient on *Core Earnings* is positive and the largest both in economic magnitude and statistical significance (at the 1% level).

For comparison, we assess the incremental predictive ability of *Core Earnings* for other measures of one-year-ahead performance. In particular, we estimate a specification similar to Eq. (3) but use as the dependent variable one-year-ahead *Cash Flow from Operations, Core Earnings, IBSPI, OIADP*, or *OPE*. The results are reported in columns 2–6.

Although our main focus is on forecasting *Net Income*, these additional results are descriptively interesting because the alternative performance measures represent a set of accrual- and cash-flow-based operating performance measures that could be important to managers' and investors' decisions. Thus, the additional tests provide a broader assessment of the incremental usefulness of *Core Earnings* for understanding firms' prospects. Table 4 shows that, in each case, *Core Earnings* contains incremental information about future performance: The coefficient on *Core Earnings* is positive and statistically significant at the 1% level. The results also suggest that the variation in *Total Adjustments* is incremental to Compustat's adjustments for future performance.

In our Online Appendix (Table OA.2), we examine the predictive ability of *Core Earnings* for future performance over a longer horizon. We repeat the analysis for Table 4,

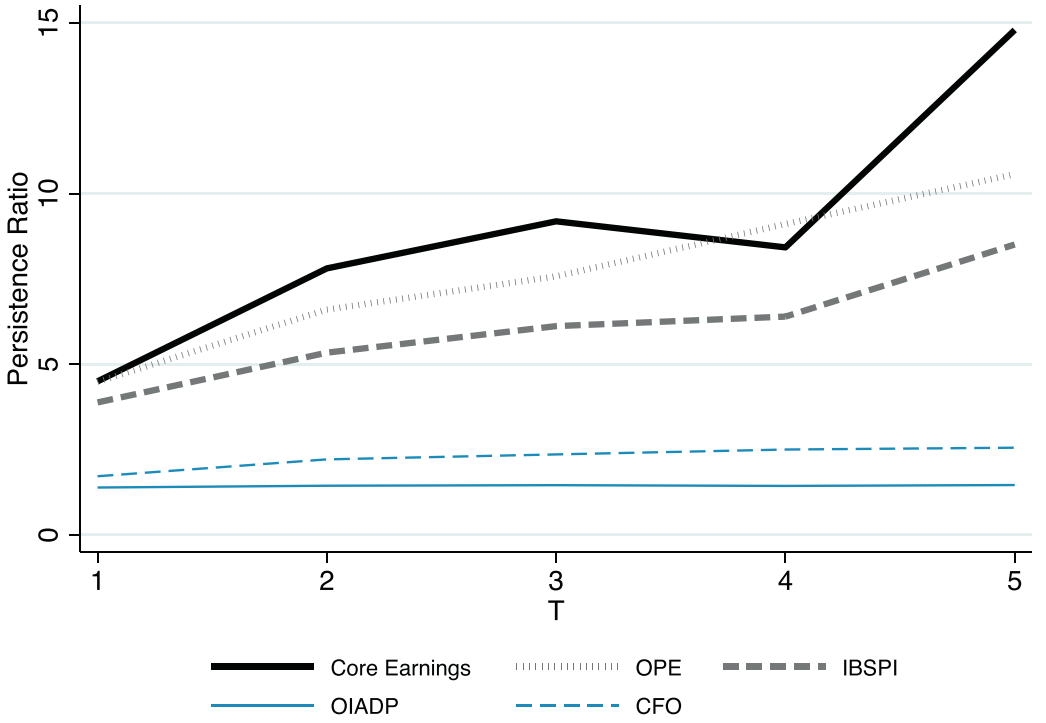

Fig. 4. Persistence ratio of earnings and adjustments. This figure displays the persistence ratio of adjusted earnings measures and their adjustments to *Net Income* over a five-year horizon. The ratio is calculated as the persistence parameter from regressing the adjusted earnings measure in year $t+T$ on the measure in year t (analogous to Eq. (2)), divided by the persistence parameter over the same horizon for the adjustments used to calculate the earnings measure (i.e., GAAP net income – adjusted earnings measure). The figure reports the persistence ratio for *Core Earnings*, *IBSPI*, *OIADP*, and *OPE*. Variables are defined in the Appendix.

Table 4
Predicting one-year-ahead performance.
This table reports OLS estimation results from regressing one-year-ahead firm performance on measures of performance from the current fiscal year, similar to Eq. (3). The measures of future performance are *Net Income* (column 1), *Cash Flow from Operations* (column 2), *Core Earnings* (column 3), *IBSPI* (column 4), *OIADP* (column 5), and *OPE* (column 6). All variables are scaled by total shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	Forward Net Income (1)	Forward Cash Flow from Operations (2)	Forward Core Earnings (3)	Forward IBSPI (4)	Forward OIADP (5)	Forward OPE (6)
Core Earnings	0.3062***	0.2255***	0.5058***	0.2826***	0.1597***	0.2592***
	(0.040)	(0.060)	(0.038)	(0.036)	(0.041)	(0.053)
Net Income	0.0542*	−0.1114***	−0.0847***	−0.0682***	−0.0026	−0.0729***
	(0.029)	(0.039)	(0.028)	(0.023)	(0.027)	(0.020)
Cash Flow from Operations	0.0579**	0.5704***	0.0763***	0.0718***	0.0354**	0.0498**
	(0.022)	(0.023)	(0.016)	(0.022)	(0.017)	(0.020)
IBSPI	0.0610	0.0324	0.0284	0.1903**	−0.0959*	−0.0294
	(0.055)	(0.069)	(0.071)	(0.068)	(0.053)	(0.047)
OIADP	0.1757**	0.3128***	0.1661**	0.1864***	0.8164***	0.1298**
	(0.071)	(0.057)	(0.061)	(0.063)	(0.052)	(0.061)
OPE	0.1817**	0.0072	0.1521**	0.1919**	−0.0483	0.4839***
	(0.080)	(0.048)	(0.060)	(0.083)	(0.041)	(0.079)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	54,228	54,228	54,228	54,228	54,228	54,228
Adjusted R^2	0.4718	0.6355	0.6360	0.5753	0.7351	0.6120

Table 5
Predicting one-year-ahead performance using core earnings components.
This table reports OLS estimation results from regressing one-year-ahead performance on *Net Income* and the sub-components of *Core Earnings* from the current fiscal year. In Panel A, we examine the location categories of non-core earnings adjustments. In Panel B, we examine the economic categories of non-core earnings adjustments. The measures of future performance are *Net Income* (column 1), *Cash Flow from Operations* (column 2), *Core Earnings* (column 3), *IBSPI* (column 4), *OIADP* (column 5), and *OPE* (column 6). Each regression is estimated using year-fixed effects and a sample of 54,228 observations, as in Table 4. All variables are scaled by total shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	Forward Net Income (1)	Forward Cash Flow from Operations (2)	Forward Core Earnings (3)	Forward IBSPI (4)	Forward OIADP (5)	Forward OPE (6)
Panel A: By location category						
Net Income	0.7621***	0.9561***	0.7505***	0.7697***	0.7204***	0.7091***
	(0.027)	(0.040)	(0.024)	(0.027)	(0.029)	(0.024)
Total Adjustments from IS	0.7175***	1.2667***	0.8281***	0.7799***	0.8394***	0.7159***
	(0.034)	(0.058)	(0.032)	(0.034)	(0.043)	(0.040)
Total Adjustments from FN	0.8163***	2.4177***	1.2751***	1.0784***	1.3535***	0.8328***
	(0.138)	(0.318)	(0.147)	(0.142)	(0.187)	(0.168)
Total Adjustments from MD&A	0.5685	2.8424***	1.1803***	1.1353**	1.8446***	1.1874***
	(0.382)	(0.356)	(0.261)	(0.332)	(0.236)	(0.270)
Total Adjustments from CF	−0.2896	4.4026***	1.0476	0.2449	0.4498	0.1618
	(0.883)	(0.745)	(0.616)	(0.851)	(0.641)	(0.608)
Adjusted R^2	0.4470	0.4270	0.5841	0.5349	0.5488	0.5430
Panel B: By economic category						
Net Income	0.7504***	0.9644***	0.7433***	0.7597***	0.7148***	0.6999***
	(0.027)	(0.041)	(0.024)	(0.028)	(0.028)	(0.024)
Net Acquistion Expenses	0.6307**	3.3949***	1.3492***	1.6541***	2.3346***	1.2853***
	(0.217)	(0.439)	(0.119)	(0.204)	(0.169)	(0.252)
Net Currency Expenses	0.8341	3.6563*	1.7086	1.8455	1.9248*	1.7808*
	(1.055)	(1.695)	(0.896)	(0.928)	(0.828)	(0.756)
Net Discontinued Ops Expenses	1.0178***	1.5432***	1.0917***	0.9684***	1.1539***	1.0364***
	(0.095)	(0.134)	(0.072)	(0.097)	(0.078)	(0.064)
Net Legal Expenses	1.0709**	1.9937***	1.4165***	1.4265***	2.2522***	1.6182***
	(0.309)	(0.475)	(0.208)	(0.209)	(0.223)	(0.257)
Net Pension Adjustments	0.9228**	2.2554**	1.4394***	1.0802**	1.2110**	0.6684
	(0.310)	(0.618)	(0.346)	(0.317)	(0.356)	(0.391)
Net Restructuring Expenses	0.7252***	1.5639***	0.8914***	0.8258***	0.9131***	0.7414***
	(0.059)	(0.087)	(0.048)	(0.056)	(0.066)	(0.060)
Net Company-Defined Other Expenses	0.5076	−0.2040	0.5338*	0.4996	0.4385	0.5372*
	(0.281)	(0.421)	(0.247)	(0.249)	(0.273)	(0.244)
Net Other Expenses	0.6454***	0.9806***	0.8315***	0.6993***	0.7820***	0.6044***
	(0.060)	(0.075)	(0.062)	(0.040)	(0.037)	(0.074)
Adjusted R^2	0.4391	0.4303	0.5773	0.5270	0.5433	0.5338

but use two- to five-year-ahead variants of each performance measure. For each of the performance measures considered, we continue to find incremental predictive ability in *Core Earnings*, consistent with *Core Earnings* effectively distinguishing the recurring and non-recurring components of *Net Income*.

4.3. *Future performance and* total adjustments *components*

To provide a deeper understanding of different non-core earnings items' information content, we also examine the sub-components of *Total Adjustments* and firms' future performance. Table 5, Panel A, reports results from regressing measures of one-year-ahead performance on *Net Income* and the net adjustment amounts that stem from the income statement, footnotes, MD&A, and cash flow statement sections of the 10-K. The categories of adjustment that help drive the observed predictive relations will exhibit a positive slope coefficient.

Generally, net adjustments identified from the income statement, footnotes, and MD&A are strongly predictive of future performance. Although adjustments from the cash flow statement generally exhibit a positive relation with future performance, it obtains statistical significance only in forecasting *Cash Flow from Operations*. We expect weaker statistical significance for these adjustments because, compared to the net adjustments derived from different parts of the 10-K, adjustments from the cash flow statement are the least significant in frequency, magnitudes, and variation (e.g., Table 1, Panel B).

Table 5, Panel B, reports the results for an analysis of the eight economic categories of *Total Adjustments* (Eq. (1)). Except for *Net Currency Expenses* and *Net Company-Defined Other Expenses*, the coefficients on each economic category are positive and statistically significant at the 5% level, suggesting that the predictive content of *Total Adjustments* for future performance is present across categories. The coefficients on *Net Currency Expenses* and *Net Company-Defined*

Table 6
Persistence of adjustment categories.
This table reports the slope coefficient from OLS regressions of the non-core adjustments from a given category of *Core Earnings* in the next fiscal year on the adjustments from the same category in the current fiscal year. Following Table 3, these regressions also include year-fixed effects. In column 1, the slope coefficients are estimated using the Net Adjustments from a given category. In column 2, the slope coefficients are estimated using the sum of income-increasing adjustments in a given category. In column 3, the slope coefficients are estimated using only the sum of income-decreasing adjustments in a given category. Panel A reports the persistence of location categories of adjustments. Panel B reports the persistence of economic categories of adjustments. All variables are scaled by total shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	(1) Net Adjustments	(2) Income-Increasing Net Adjustments	(3) Income-Decreasing Net Adjustments
Panel A: By location category			
IS	0.1551***	0.2037***	0.2151***
	(0.023)	(0.038)	(0.029)
MD&A	0.3067***	0.3248***	0.3067***
	(0.021)	(0.021)	(0.071)
FN	0.4654***	0.5292***	0.3964***
	(0.051)	(0.046)	(0.071)
CF	0.3559***	0.3863***	0.3486***
	(0.036)	(0.040)	(0.038)
Panel B: By economic category			
Acquisitions	0.3773***	0.3987***	0.2757***
	(0.020)	(0.020)	(0.039)
Currency	0.2023*	0.4327***	0.3147***
	(0.110)	(0.114)	(0.036)
Discontinued Operations	0.1127***	0.1732***	0.1604***
	(0.011)	(0.012)	(0.016)
Legal and Regulatory	0.1643***	0.1976***	0.1988***
	(0.023)	(0.025)	(0.035)
Pension	0.5195***	0.6749***	0.5624***
	(0.118)	(0.077)	(0.155)
Restructuring	0.2049***	0.2295***	0.2008***
	(0.038)	(0.047)	(0.027)
Company-Defined Other	0.4002***	0.4011***	0.4975***
	(0.031)	(0.047)	(0.034)
Other	0.2320**	0.1984*	0.3850***
	(0.093)	(0.107)	(0.073)

Other Expenses are positive in all but one case. However, their statistical significance is generally weak, probably because they are the least significant in terms of frequency, magnitudes, and variation (e.g., Table 1, Panel B)

To better understand the relation between the non-core earnings categories and future performance, Table 6 reports the estimated persistence parameters for each adjustment category over a one-year horizon, following Table 3. Panel A, column 1, reports the estimated persistence parameters of net adjustments stemming from the income statement, footnotes, MD&A, and cash flow statement sections of the 10-K, while Panel B, column 1, reports the estimated persistence parameters of net adjustments from each of the eight economic categories of *Total Adjustments*. Although there is variation in the persistence across categories, in each case the persistence parameter is significantly lower than *Net Income* and *Core Earnings* (Table 3, columns 1 and 2).

We further decompose the persistence of each non-core earnings type into their income-increasing (i.e., when there are net expenses) and income-decreasing (i.e., when there are net gains) parts and report the results in columns 2 and 3, respectively. Generally, we find a lower level of persistence in the income-decreasing components of net adjustments.

Although some categories of adjustments exhibit higher degrees of persistence over a one-year horizon, we find that the persistence parameters for all categories decline significantly over time, consistent with these items being less persistent over a longer horizon (results untabulated). For example, the persistence parameters of *Acquisitions, Pension*, and *Restructuring* decline to 0.09, 0.30, and 0.06 by year five, declines of 50% to 75%.

4.4. Robustness: core earnings *and* street earnings

Our final analysis of the forecasting properties of *Core Earnings* examines whether its predictive power for future *Net Income* and other performance measures is incremental to *Street Earnings*, a non-GAAP income measure provided by IBES that is commonly used and analyzed in the liter-

Table 7
Incremental predictive ability of *Core Earnings* relative to *Street Earnings*.
This table reports OLS estimation results from regressing one-year-ahead firm performance on measures of performance from the current fiscal year, similar to Table 4. The main difference is that we add *Street Earnings* as an additional explanatory variable. The measures of future performance are *Net Income* (column 1), *Cash Flow from Operations* (column 2), *Street Earnings* (column 3), *Core Earnings* (column 4), *IBSPI* (column 5), *OIADP* (column 6), and *OPE* (column 7). All variables are scaled by total shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	Forward Net Income (1)	Forward Cash Flow from Operations (2)	Forward Street Earnings (3)	Forward Core Earnings (4)	Forward IBSPI (5)	Forward OIADP (6)	Forward OPE (7)
Core Earnings	0.2387***	0.1175**	0.0989**	0.4199***	0.2113***	0.1245***	0.2323***
	(0.048)	(0.050)	(0.035)	(0.045)	(0.037)	(0.040)	(0.048)
Net Income	0.0785*	−0.1062***	−0.0704***	−0.0743***	−0.0619***	−0.0209	−0.0770***
	(0.039)	(0.034)	(0.017)	(0.021)	(0.021)	(0.017)	(0.017)
Cash Flow from Operations	0.0410	0.5826***	0.0421**	0.0631***	0.0525**	0.0259	0.0308
	(0.025)	(0.027)	(0.016)	(0.017)	(0.024)	(0.016)	(0.022)
Street Earnings	0.1883***	0.1703***	0.6462***	0.1970***	0.2334***	0.1357***	0.2475***
	(0.041)	(0.036)	(0.078)	(0.023)	(0.036)	(0.023)	(0.031)
IBSPI	0.0365	0.0634	0.0108	0.0105	0.1958**	−0.0585*	0.0243
	(0.062)	(0.055)	(0.044)	(0.053)	(0.080)	(0.031)	(0.042)
OIADP	0.1402*	0.3380***	0.0675	0.1423**	0.1547**	0.8487***	0.1264*
	(0.073)	(0.055)	(0.044)	(0.063)	(0.068)	(0.065)	(0.066)
OPE	0.1426	−0.0921*	0.0824	0.1216	0.1065	−0.1569**	0.2821***
	(0.096)	(0.050)	(0.058)	(0.076)	(0.105)	(0.062)	(0.081)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	43,380	43,380	43,380	43,380	43,380	43,380	43,380
Adjusted R^2	0.4805	0.6442	0.7062	0.6554	0.5915	0.7453	0.6395

ature.[15] This measure also can serve as a proxy for managers' non-GAAP earnings, as Bentley et al. (2018) finds the two overlap in a majority of instances. Because about 20% of our sample does not have analyst forecast data from IBES, we conduct this analysis separately using a subsample of observations with non-missing *Street Earnings*.

Table 7 reports results analogous to Table 4, but we include *Street Earnings* as an additional contemporaneous control in each specification. We also evaluate a specification that considers one-year-ahead *Street Earnings* as the dependent variable of interest and report the results in column 3. Table 7 shows that *Core Earnings* contains information about future performance that is incremental to *Street Earnings*. In each column, the coefficient on *Core Earnings* is positive and statistically significant at the 5% level.

Together, Tables 3–7 provide novel evidence on the predictive and persistence properties of non-core earnings components of GAAP net income. Our empirical evidence suggests that non-core earnings components are informative of future performance. However, information about them is dispersed across various parts of the 10-K (both on and off the income statement). Given the increasing complexity and length of financial reports, our findings highlight the increasing processing costs market participants face in obtaining value-relevant information from 10-Ks. Our analyses also suggest that the predictive ability of *Core Earnings* stems, at least in part, from its ability to distinguish the recurring and non-recurring components of *Net Income*. Nevertheless, by weighting or selectively excluding certain adjustment categories, it may be possible to improve upon *Core Earnings* in terms of its ability to forecast future performance. To the extent that is so, our results can be considered conservative.

5. Market processing of non-core earnings

We next analyze whether market participants grasp the subtleties of earnings components and impound the implications of the distinction between core and non-core earnings.

5.1. Future analyst forecast revisions

We begin by examining how analysts respond to non-core earnings items. To the extent that analysts respond promptly, their earnings forecast revisions in the year following a 10-K filing would not be systematically related to the sign and magnitude of non-core earnings.

Table 8 reports the results from pooled cross-sectional regressions of *Forecast Revisions* on *Total Adjustments*, where *Forecast Revisions* is the average monthly difference in mean analyst earnings per share forecasts over the 12 months after 10-K filing date. Column 1 shows that higher *Total Adjustments* (i.e., understatement of *Net Income* as a measure of core earnings due to non-core expenses) forecasts increases in analysts' earnings per share forecasts during the 12 months following the 10-K filing. The coefficient on *Total Adjustments* is positive and significant at the 5% level. This result is robust to the inclusion of the following controls: *Earnings Surprise* and *Lagged Forecast Revisions* in the regression for column 2,

[15] Compustat provides a variable, "S&P Core Earnings," that makes seven adjustments to net income to better measure core earnings: impairment of goodwill, settlements, implied option expense, gain/loss on sale, restructuring charge, pension adjustments, and retirement adjustments. We do not examine this variable because it is sparsely populated.

Table 8
Earnings adjustments and future forecast revisions.
This table reports OLS estimation results from regressing analysts' future forecast revisions on net non-core earnings adjustments. The dependent variable, *Forecast Revisions*, is the average monthly revision of mean analyst earnings per share forecasts in the 12 months after the release of the 10-K. *Total Adjustments* is the net value of all non-core earnings adjustments. *Total Adjustments on IS* is the net value of non-core earnings adjustments identified from the face of the income statement. *Total Adjustments in FN, Total Adjustments in MD&A*, and *Total Adjustments in CF* are the net value of non-core earnings adjustments identified from the footnotes, MD&A, and cash flow statement sections of the 10-K, respectively. All variables are scaled by shares outstanding and winsorized at the top and bottom 0.5% of the cross-sectional distribution. Variables are defined in the Appendix. Standard errors, reported in parentheses, are two-way-cluster robust, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	Forecast revisions				
	(1)	(2)	(3)	(4)	(5)
Total Adjustments	0.0012**	0.0013***	0.0013***	0.0015**	
	(0.001)	(0.000)	(0.000)	(0.001)	
Total Adjustments from IS					0.0012*
					(0.001)
Total Adjustments from FN					0.0056***
					(0.002)
Total Adjustments from MD&A					0.0031
					(0.002)
Total Adjustments from CF					0.0015
					(0.005)
Earnings Surprise		−0.0012	−0.0014	−0.0012	−0.0013
		(0.002)	(0.002)	(0.002)	(0.002)
Lagged Forecast Revision		0.0594	0.0578	0.0596	0.0594
		(0.044)	(0.043)	(0.044)	(0.044)
Size			0.0000	−0.0001	−0.0001
			(0.000)	(0.000)	(0.000)
Book-to-Market			−0.0009	−0.0010	−0.0010
			(0.001)	(0.001)	(0.001)
Total Accruals				−0.0007**	−0.0007**
				(0.000)	(0.000)
IBSPI Adjustments				0.0002	0.0001
				(0.001)	(0.001)
OIADP Adjustments				−0.0005	−0.0005
				(0.001)	(0.001)
OPE Adjustments				−0.0005	−0.0004
				(0.001)	(0.001)
Street Adjustments				0.0004	0.0004
				(0.001)	(0.001)
Year FE	Yes	Yes	Yes	Yes	Yes
Observations	42,645	42,645	42,645	42,645	42,645
Adjusted R^2	0.0306	0.0348	0.0352	0.0388	0.0391

Size and *Book-to-Market* in the regression for column 3, and the adjustments embedded in other adjusted earnings measures in the regression for column 4. Notably, the results in column 4 show that *IBSPI Adjustments, OIADP Adjustments, OPE Adjustments*, and *Street Adjustments* are not statistically significantly (at the 10% level) associated with analysts' future forecast revisions; only *Total Adjustments* and *Total Accruals* exhibit statistically significant relations.

We also examine how forecast revisions respond to the non-core earnings items from the different parts of the 10-K. We replicate the specification for column 4 but replace *Total Adjustments* with *Total Adjustments from IS, Total Adjustments from FN, Total Adjustments from MD&A*, and *Total Adjustments from CF*. In column 5, we find a positive and statistically significant coefficient on both *Total Adjustments from IS* and *Total Adjustments from FN*, with the statistical significance and economic magnitude of the coefficient being the largest for the non-core earnings items stemming from the footnotes.

These findings suggest analysts are not efficient in incorporating the implications of non-core earnings into their forecasts, particularly those disclosed in the footnotes of the 10-K. These findings are consistent with behavioral biases or with incentive-misalignment problems among analysts [see Kothari et al. (2016) for a review], as well as the footnotes being a less structured and less salient section of the 10-K.

5.2. Stock market returns

Our final tests examine whether market prices impound the implications of non-core earnings items efficiently. We begin with portfolio-level average returns. In Table 9, we divide firm-years into deciles, based on the magnitude of *Total Adjustments* relative to the distribution from the prior calendar year. Firms in the highest decile have the highest dollar value of income-increasing adjustments; those in the lowest decile have the highest dollar value of income-decreasing adjustments.

Table 9
Future returns across deciles of *Total Adjustments*.
This table reports value-weighted average returns in the 12 months following the month in which a firm files its 10-K. Value weights are based on firms' market capitalization in the month prior to their 10-K filings. We summarize these average returns among firms that filed a 10-K in each calendar quarter by deciles of *Total Adjustments* scaled by total assets per share. We also summarize the difference in average returns between the top and bottom deciles ("High – Low"). Decile assignments are made by comparing each firm's scaled *Total Adjustments* to the decile breakpoints computed using the prior calendar year's cross-sectional distribution. The first column summarizes value-weighted average 12-month raw returns. The remaining columns report factor loadings and abnormal monthly returns from a calendar-time value-weighted portfolio trading strategy. We form, update, and rebalance portfolios when firms file 10-Ks. We assign a firm that files a 10-K in a particular month to a decile portfolio by comparing its *Total Adjustments* to the decile breakpoints computed using the prior calendar year's cross-sectional distribution of *Total Adjustments*. Abnormal returns (*ALPHA*) are estimated using the Fama-French three-factor model—with a market factor (*MKTRF*), a size factor (*SMB*), and a value factor (*HML*)—augmented with the momentum factor (*UMD*). We report *T*-statistics based on the time series of 12 month returns across calendar quarters in parentheses.

	Annual returns	Factor-adjusted alphas and factor loadings				
	Raw	ALPHA	MKTRF	SMB	HML	UMD
10 (High Adjustments)	11.927	0.157	0.937	0.188	0.078	−0.225
	(3.71)	(0.78)	(18.46)	(2.97)	(1.19)	−(5.63)
9	9.825	0.197	0.921	−0.058	0.190	−0.091
	(4.34)	(1.55)	(28.75)	−(1.45)	(4.63)	−(3.59)
8	11.532	0.360	0.944	−0.154	0.255	−0.081
	(4.23)	(2.53)	(26.34)	−(3.45)	(5.54)	−(2.87)
7	8.886	0.110	0.957	−0.230	0.219	−0.043
	(4.62)	(0.87)	(30.24)	−(5.85)	(5.41)	−(1.70)
6	10.568	0.023	0.964	−0.143	0.262	−0.069
	(4.63)	(0.17)	(28.01)	−(3.34)	(5.95)	−(2.56)
5	10.875	−0.251	1.050	−0.104	0.268	0.017
	(4.57)	−(1.67)	(27.75)	−(2.22)	(5.52)	(0.58)
4	9.060	0.058	1.089	0.040	0.370	−0.054
	(3.85)	(0.37)	(27.76)	(0.82)	(7.35)	−(1.73)
3	11.149	0.443	1.012	0.054	−0.125	−0.099
	(2.90)	(2.41)	(21.83)	(0.94)	−(2.10)	−(2.71)
2	9.390	−0.108	1.083	0.107	−0.544	−0.101
	(2.90)	−(0.58)	(23.11)	(1.83)	−(9.06)	−(2.73)
1 (Low Adjustments)	3.529	−0.504	1.224	0.130	−0.725	−0.248
	(1.27)	−(1.80)	(17.37)	(1.49)	−(8.02)	−(4.45)
High–Low	8.398	0.661	−0.287	0.057	0.802	0.022
	(2.74)	(1.94)	−(3.34)	(0.54)	(7.30)	(0.33)

To the extent that investors under-appreciate the implications of non-core earnings items, for example, due to underreacting to low-salience earnings signals (e.g., Sloan, 1996) or overweighting analysts' forecasts (e.g., So, 2013), we expect the stock returns of the highest decile portfolio to outperform those in the lowest decile. The intuition is that firms' core earnings in the highest decile are relatively high compared to GAAP earnings and vice versa for the lowest decile firms. As investors learn about firms' core earnings over time, stock prices adjust gradually.

In Table 9, we summarize the value-weighted returns to each decile of total adjustments scaled by assets. Value weights are based on firms' market capitalization in the month before the 10-K filing. Column 1 provides the average 12-month raw returns: firms in decile 10 have a value-weighted average annual return of 11.9%, while firms in decile 1 have an average return of 3.5%. The 8.4% spread in raw returns is both statistically and economically significant. The spread in raw returns concentrates among the lowest decile, suggesting investors are particularly slow at pricing adjustments that overstate GAAP relative to core earnings (e.g., large non-recurring gains). These findings dovetail nicely with Curtis et al. (2014), which shows that managers are less likely to recognize non-recurring gains in their non-GAAP earnings disclosures. Jointly, these results are consistent with investors being less likely to efficiently incorporate into price the implications of less salient earnings items.

The remaining columns in Table 9 report factor loadings and abnormal monthly returns from a calendar-time portfolio trading strategy. We estimate and report abnormal returns (*ALPHA*) for each decile portfolio and for the long-short portfolio (decile 10 minus decile 1) using the Fama-French three-factor model, with a market factor (*MKTRF*), a size factor (*SMB*), and a value factor (*HML*), augmented with the momentum factor (*UMD*). We find the mean difference in monthly abnormal returns between the tenth decile and first decile value-weighted portfolios to be 0.66%. These monthly excess returns are both statistically and economically significant, equating to an annualized difference of 8.2%. These figures are particularly impressive in light of the fact that they are produced by a fairly low turnover portfolio trading strategy, since each firm files only one 10-K per year.[16]

[16] In untabulated results, we find qualitatively similar results using equal-weighted portfolios. For example, the mean difference in monthly abnormal returns between the tenth-decile and first-decile equal-weighted portfolios is 0.57%, or 7.1% annualized.

Table 10
Cross-sectional annual-return regressions.
This table reports OLS estimation results from regressing firms' cumulative returns over the 12 month period following their 10-K filing dates on the net value of non-core earnings adjustments identified in an entire 10-K (columns 1–5) or their disclosure location sub-components (column 6). Sample sizes differ across columns based on the availability of control variables. Cross-sectional-fixed effects, based on the year and month of the 10-K filing, are included throughout. *Total Adjustments* is the net value of all non-core earnings adjustments. *Total Adjustments on IS* is the net value of non-core earnings adjustments identified from the face of the income statement. *Total Adjustments in FN, Total Adjustments in MD&A, Total Adjustments in CF* are the net value of non-core earnings adjustments identified from the footnotes, MD&A, and cash flow statement sections of the 10-K. Variables are defined in the Appendix; however, *Total Adjustments*, its disclosure location sub-components, *Gross Profit, Total Accruals, Special Items, OIADP Adjustments, OPE Adjustments*, and *Street Adjustments* are all scaled by total assets in this table. All explanatory variables are winsorized at the 1% level. *T*-statistics, reported in parentheses, are based on two-way-cluster robust standard errors, clustering at the firm and year levels. Significance levels are indicated by *, **, *** for 10%, 5%, and 1% respectively.

	(1)	(2)	(3)	(4)	(5)	(6)
Total Adjustments	86.365***	70.718***	69.372***	83.799***	66.723**	
	(3.04)	(2.87)	(2.91)	(3.10)	(2.20)	
Total Adjustments from IS						65.493**
						(2.26)
Total Adjustments from FN						296.983***
						(2.94)
Total Adjustments from MD&A						19.320
						(0.15)
Total Adjustments from CF						−148.725
						(−0.48)
Size		−4.940***	−4.750***	−6.153***	−5.511***	−5.541***
		(−3.45)	(−3.15)	(−3.55)	(−3.50)	(−3.52)
Book-to-Market		2.174	2.254	1.849	2.311	2.324
		(1.25)	(1.51)	(1.33)	(1.55)	(1.54)
Momentum			−0.035	−0.032	−0.035	−0.034
			(−0.76)	(−0.68)	(−0.72)	(−0.72)
Gross Profit			8.575***	1.835	3.722	3.702
			(2.74)	(0.57)	(1.33)	(1.32)
Share Turnover			−0.205	−0.222	−0.250	−0.252*
			(−1.07)	(−1.36)	(−1.63)	(−1.66)
Dispersion				−6.641***	−7.120***	−7.152***
				(−7.15)	(−7.67)	(−7.74)
Coverage				5.083***	4.244***	4.276***
				(3.51)	(3.07)	(3.09)
Total Accruals					−27.469**	−27.872**
					(−2.53)	(−2.58)
IBSPI Adjustments					−59.205*	−58.328*
					(−1.96)	(−1.93)
Street Adjustments					3.698	3.576
					(0.16)	(0.16)
OIADP Adjustments					−37.856*	−37.592*
					(−1.94)	(−1.83)
OPE Adjustments					2.501	3.632
					(0.07)	(0.10)
Filing Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	60,294	60,294	60,292	50,055	49,442	49,442
Adjusted R^2	0.0553	0.0671	0.0684	0.0720	0.0738	0.0738

We complement the portfolio-based findings in Table 9 by examining the link between future returns and *Total Adjustments* in multivariate tests. Table 10 reports the results of regressing firms' market-adjusted returns during the 12 months following the 10-K filing date on *Total Adjustments* and several control variables.

Columns 1 reports the regression counterpart of Table 9, using the same underlying sample of observations with no controls. Columns 2–5 report the results when incrementally adding control variables to the regression. In columns 1–3, the coefficients on *Total Adjustments* are positive and significant and incremental to a set of standard control variables known to explain the cross-section of returns: firm size, book-to-market, momentum, gross profit, and share turnover. These findings suggest that our results are unlikely driven by well-known asset pricing factors.[17]

In column 4, the coefficient on *Total Adjustments* remains positive and significant after controlling for analyst dispersion and coverage, which prior studies link to the

[17] In our return-prediction tests, *Total Adjustments* is scaled by total assets to neutralize the potential effects of firm size on stock returns, which is a standard approach common to asset pricing studies focused on firms' profits (e.g., Sloan, 1996; So, 2013; Novy-Marx, 2013) and facilitates interpretability in these regressions. Our Online Appendix (Table OA.5) shows that we obtain similar inferences when scaling by shares outstanding. It also shows (Tables OA.3–OA.4) that our main results on the persistence and forecasting properties of *Core Earnings* remain similar if we instead scale the adjusted earnings and adjustment measures by total assets. Thus, our main findings are robust to the use of a consistent deflator.

cross-section of returns (e.g., Kothari et al., 2016; Lee and So, 2017). These results mitigate concerns that our results stem from the pricing of information asymmetries or investor disagreement stemming from complexity in the financial reporting process.

We next control for the alternative earnings adjustments we consider, in particular the adjustments embedded in *Cash Flow from Operations, IBSPI, Street Earnings, OIADP*, and *OPE*. As with *Total Adjustments*, we scale each of these adjustments by total assets. Of particular note, in column 5 we find the inclusion of these variables decreases the significance of *Total Adjustments*, which is consistent with the findings in Dechow and Ge (2006) that investors overestimate the persistence of Compustat-identified special or unusual items. Nonetheless, with the inclusion of these controls, we find that the coefficient on *Total Adjustments* remains positive and statistically significant, indicating that the measure captures information distinct from alternative earnings adjustments studied in prior research.

Finally, we examine how the return-predictive relation of *Total Adjustments* varies based on the location of disclosure in the 10-K. We replicate the specification for column 5, but replace *Total Adjustments* with *Total Adjustments from IS, Total Adjustments from FN, Total Adjustments from MD&A*, and *Total Adjustments from CF*. Consistent with our findings with analyst forecast revisions, in column 6 we find a positive and statistically significant coefficient on both *Total Adjustments from IS* and *Total Adjustments from FN*, with the statistical significance and economic magnitude of the coefficient being the largest for the adjustments stemming from the footnotes. The incremental significance of these adjustment measures when controlling for *IBSPI* and *OIADP* suggests that the predictive power of our measures for returns stems from identifying less obvious items that are not reflected in Compustat *Special Items* or non-operating earnings.

Overall, the results in Tables 8–10 suggest that market participants are inefficient in impounding the implications of non-core earnings, especially those stemming from the footnotes of the 10-K, into stock prices. One explanation is that the information in the footnotes is less structured and less salient compared to the information disclosed on the face of the income statement or in the MD&A.

6. Conclusion

This paper shows that disclosures of income-statement items stemming from ancillary business activities or transitory shocks are frequent and economically significant, and increasingly so from 1998 to 2017. A significant proportion of these items, in terms of frequency and magnitude, is disclosed off the income statement in less structured or salient parts of the 10-K. Using a novel database that comprehensively identifies these items for public firms, we find that adjusting GAAP earnings to exclude these items produces a measure of core earnings that possesses several desirable properties. For example, it distinguishes the persistent and transitory components of *Net Income*, and forecasts future *Net Income* and a variety of other performance measures relevant to managers' and investors' decisions. However, we find that analysts and other market participants are slow to impound the implications of the distinction between core and non-core earnings, especially those disclosed from the footnotes section of the 10-K.

The implications of these findings are potentially far-reaching for investors and researchers. Our results highlight the importance of detailed financial statement analysis, including the information disclosed off the income statement, for understanding, measuring, and forecasting firms' performance. At the same time, our results can inform regulators and policymakers. In particular, our findings attest to the large and growing computational costs of processing information in firms' 10-Ks. These costs point to the potential for increasing inequities in the usefulness of financial statements for sophisticated versus unsophisticated investors who differ in their technological capabilities for processing 10-K information. Recognition of these issues has led standard setters to explore when and how to better disaggregate and classify line items on the financial statements (e.g., IASB's ongoing "Primary Financial Statements project"). Our findings highlight a potential hidden downside associated with more granular disclosures and point to potential gains from standardizing and making more easily accessible their location and format to reduce processing costs.

Appendix A. Description of variables

This table defines variables used in our analysis. Accounting variables are retrieved from New Constructs and Compustat, as described below. Where Compustat (IBES) {CRSP} variables are used, the variable abbreviation is reported in brackets (parentheses){curly brackets}.

Variable	Description	Computation
Book-to-Market	Natural log of the book-to-market ratio	Calculated as 1 + Book value of Equity [CEQ]/(Shares Outstanding {SHROUT} from five days prior to the 10-K filing × Share Price {PRC} from five days prior to the 10-K filing).
Cash Flow from Operations	Annual net operating cash flow	(Net Operating Cash Flow [OANCF] – Extraordinary Items and Discontinued Operations [XIDOC])/Common Shares Outstanding [CSHO].
Core Earnings	Annual core earnings estimated using NC data	(*Net Income* [NI] + *Net Acquisition Expenses* + *Net Currency Expenses* + *Net Discontinued Ops Expenses* + *Net Legal Expenses* + *Net Pension Adjustments* + *Net Restructuring Expenses* + *Net Company-Defined Other Expenses* + *Net Other Expenses*)/Common Shares Outstanding [CSHO].

(*continued on next page*)

(*continued*)

Variable	Description	Computation
Coverage	Analyst coverage	Natural log of the total number of analysts covering the firm (NUMEST).
Dispersion	Analyst forecast dispersion	1 + the natural log of the standard deviation of analysts' earnings forecasts (STDEV).
Earnings Surprise	Difference between *Street Earnings* and mean analyst earnings estimate	*Street Earnings* (ACTUAL) - *Mean Analyst Estimate* (MEANEST).
Forecast Revisions	Average monthly change in analysts' consensus earnings-per-share estimate for the following year	Month-over-month change in the mean analyst estimate (MEANEST).
Gross Profit	Annual gross profit	(*Revenue* [REVT] - *COGS* [COGS])/*Total Assets* [AT].
IBSPI	(Income before special items	(Net income [NI] - Special Items [SPI])/Common Shares Outstanding [CSHO].
IBSPI Adjustments	Special items	(*IBSPI* - *Net Income* [NI])/Common Shares Outstanding [CSHO].
Momentum	Stock return from prior 12 months	12-month cumulative buy-and-hold returns RET during the 12 months ending 10 days before 10-K filing.
Net Acquisition Expenses	Annual non-core net expenses due to acquisitions	Net acquisition-related transactions that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Net Company-Defined Other Expenses	Annual net expenses from company-defined "other" expenses	Net transactions that impact *Net Income* that the company defines as "other" on the income statement/Common Shares Outstanding [CSHO].
Net Currency Expenses	Annual non-core net expenses due to foreign currency fluctuations	Net foreign-currency-related transactions that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Net Discontinued Ops Expenses	Annual non-core net expenses due to discontinued operations	Net transactions related to discontinued operations that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Net Income	Annual net income	GAAP Earnings [NI]/Common Shares Outstanding [CSHO].
Net Legal Expenses	Annual non-core net expenses due to legal, regulatory, and insurance events	Net transactions related to legal, regulatory, or insurance events that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Net Other Expenses	Annual non-core net expenses that do not belong to other categories	All other net transactions that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Net Pension Adjustments	Annual non-core net expenses due to pension plans	Net pension-related transactions that impact *Net Income* and that are deemed non-core by NC/Common Shares Outstanding [CSHO].
Net Restructuring Expenses	Annual non-core net expenses due to restructuring	Net restructuring-related transactions that impact *Net Income* and that are deemed non-core by NC/Common Shares Outstanding [CSHO].
OIADP	Operating income	Operating income after depreciation [OIADP]/Common Shares Outstanding [CSHO].
OIADP Adjustments	Non-operating income	(*OIADP* [OIADP] - *Net Income* [NI])/Common Shares Outstanding [CSHO].
OPE	Earnings from operations	Earnings per share from operations [OPEPS] × Common shares used to calculate earnings per share basic [CSHPRI]/Common Shares Outstanding [CSHO].
OPE Adjustments	Earnings not from operations	(*OPE* - *Net Income* [NI])/Common Shares Outstanding [CSHO].
Ret	Market-adjusted annual return	Calculated as firm return {RET} minus market return (using the CRSP value-weighted index {VWRETD}) for the 12 months beginning three months after the fiscal-year end.
Share Turnover	Trading volume	Daily Trading Volume {VOL} / Daily Shares Outstanding {SHROUT}, averaged over the six months prior to the 10-K filing date.
Size	Natural log of market capitalization	Log(Shares Outstanding {SHROUT} from five days prior to the 10-K filing × Share Price {PRC} from five days prior to the 10-K filing).
Special Items	Special items	Special items [SPI]/Common Shares Outstanding [CSHO]
Street Earnings	Adjusted earnings per share as compiled by IBES	Street earnings per share (ACTUAL).
Street Adjustment	Difference between *Street Earnings* and *Net Income*	(Street earnings per share (ACTUAL) × Shares outstanding used for street EPS (SHOUT) - *Net Income* [NI])/Common Shares Outstanding [CSHO].
Total Accruals	Total accruals	(*Net Income-Cash flow from Operations*)/Common Shares Outstanding [CSHO].
Total Adjustments	Net expenses from income-statement items that are transitory or stem from ancillary business activities	(*Net Acquisition Expenses* + *Net Currency Expenses* + *Net Discontinued Ops Expenses* + *Net Legal Expenses* + *Net Pension Adjustments* + *Net Restructuring Expenses* + *Net Company-Defined Other Expenses* + *Net Other Expenses*)/Common Shares Outstanding [CSHO].
Total Adjustments from CF	Annual non-core net expenses reported in the cash flow statement	Total net expenses reported in the cash flow statement statement that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Total Adjustments from FN	Annual non-core net expenses reported in the footnotes	Total net expenses reported in the footnotes that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Total Adjustments from IS	Annual non-core net expenses reported on the income statement	Total net expenses reported on the face of the income statement that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].
Total Adjustments from MD&A	Annual non-core net expenses reported in the MD&A	Total net expenses reported in the MD&A that impact *Net Income* and that are deemed to be non-core by NC/Common Shares Outstanding [CSHO].

References

Abarbanell, J.S., Bernard, V.L., 1992. Tests of analysts' overreaction/underreaction to earnings information as an explanation for anomalous stock price behavior. J. Finance 47 (3), 1181–1207.
Ball, R., Gerakos, J., Linnainmaa, J.T., Nikolaev, V.V., 2015. Deflating profitability. J. Financ. Econ. 117 (2), 225–248.
Barth, M.E., Clinch, G., 1998. Revalued financial, tangible, and intangible assets: associations with share prices and non-market-based value estimates. J. Account. Res. 36, 199–233.
Barth, M.E., Clinch, G., 2009. Scale effects in capital markets-based accounting research. J. Bus. Finance Account. 36 (3–4), 253–288.
Barth, M.E., Gow, I.D., Taylor, D.J., 2012. Why do pro forma and street earnings not reflect changes in GAAP? Evidence from SFAS 123R. Rev. Account. Stud. 17 (3), 526–562.
Bentley, J.W., Christensen, T.E., Gee, K.H., Whipple, B.C., 2018. Disentangling managers' and analysts' non-GAAP reporting. J. Account. Res. 56 (4), 1039–1081.
Bradshaw, M.T., Sloan, R.G., 2002. GAAP versus the street: an empirical assessment of two alternative definitions of earnings. J. Account. Res. 40 (1), 41–66.
Burgstahler, D., Jiambalvo, J., Shevlin, T., 2002. Do stock prices fully reflect the implications of special items for future earnings? J. Account. Res. 40 (3), 585–612.
Bushman, R.M., Lerman, A., Zhang, X.F., 2016. The changing landscape of accrual accounting. J. Account. Res. 54 (1), 41–78.
Chan, K., Chan, L.K.C., Jegadeesh, N., Lakonishok, J., 2006. Earnings quality and stock returns. J. Bus. 79 (3), 1041–1082.
Curtis, A.B., Mcvay, S.E., Whipple, B.C., 2014. The disclosure of non-GAAP earnings information in the presence of transitory gains. Account. Rev. 89 (3), 933–958.
Da, Z., Warachka, M., 2011. The disparity between long-term and short--term forecasted earnings growth. J. Financ. Econ. 100 (2), 424–442.
Dechow, P.M., Ge, W., 2006. The persistence of earnings and cash flows and the role of special items: implications for the accrual anomaly. Rev. Account. Stud. 11, 253–296.
Doyle, J., Lundhom, R., Soliman, M.T., 2003. The predictive value of expenses excluded from pro forma earnings. Rev. Account. Stud. 8, 145–174.
Doyle, J.T., Jennings, J.N., Soliman, M.T., 2013. Do managers define non–GAAP earnings to meet or beat analyst forecasts? J. Account. Econ. 56, 40–56.
Dyer, T., Lang, M., Stice-Lawrence, L., 2017. The evolution of 10-K textual disclosure: evidence from latent dirichlet allocation. J. Account. Econ. 64 (2–3), 221–245.
Dyreng, S.D., Hanlon, M., Maydew, E.L., 2008. Long-run corporate tax avoidance. Account. Rev. 83 (1), 61–82.
Fama, E.F., French, K.R., 2006. Profitability, investment and average returns. J. Financ. Econ. 82 (3), 491–518.
Gu, Z., Chen, T., 2004. Analysts' treatment of nonrecurring items in street earnings. J. Account. Econ. 38, 129–170.
Kothari, S.P., So, E., Verdi, R., 2016. Analysts' forecasts and asset pricing: a survey. Annu. Rev. Financ. Econ. 8, 197–220.
Lee, C.M., So, E.C., 2017. Uncovering expected returns: information in analyst coverage proxies. J. Financ. Econ. 124 (2), 331–348.
Li, F., 2008. Annual report readability, current earnings, and earnings persistence. J. Account. Econ. 45 (2–3), 221–247.
Loughran, T., McDonald, B., 2014. Measuring readability in financial disclosures. J. Finance 69 (4), 1643–1671.
McKinsey & Company, Koller, T., Goedhart, M.H., Wessels, D., 2010. Valuation: Measuring and Managing the Value of Companies, fifth ed. John Wiley & Sons, Inc, Hoboken, NJ.
Nallareddy, S., Sethuraman, M., Venkatachalam, M., 2020. Changes in accrual properties and operating environment: implications for cash flow predictability. J. Account. Econ. 69 (2–3), 101313.
Novy-Marx, R., 2013. The other side of value: the gross profitability premium. J. Financ. Econ. 108, 1–28.
Rappaport, A., 1998. Creating Shareholder Value: A Guide for Managers and Investors, second ed. Free Press, New York, NY.
Rappaport, A., Mauboussin, M.J., 2001. Expectations Investing: Reading Stock Prices for Better Returns. Harvard Business Press, Boston, MA.
Sloan, R.G., 1996. Do stock prices fully reflect information in accruals and cash flows about future earnings? Account. Rev. 71 (3), 289–315.
So, E.C., 2013. A new approach to predicting analyst forecast errors: do investors overweight analyst forecasts? J. Financ. Econ. 108, 615–640.
Stewart, G.B., 1991. The Quest for Value: A Guide for Senior Managers. Harper Business, New York, NY.
Wang, C.C., Thomas, K., 2018. New constructs: disrupting fundamental analysis with Robo-analysts. Harv. Bus. Sch. Case 9-118-068, 1–18.