Analysts’ Strategic Use of Accrual Components

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Abstract

In this paper we examine analysts’ strategic use of information in accruals’ components. Specifically, we investigate whether analysts’ optimism with respect to operating accruals triggers incentives to strategically infuse financial accruals with pessimism to offset the overoptimistic error. We extend the work by Bradshaw et al. (2001) and Drake and Myers (2011) by using total instead of working capital accruals and by breaking total accruals into components with varying degrees of reliability using the approach from Richardson et al. (2005). Our analysis reveals that the negative relation between operating accrual components and forecast errors, i.e., analysts’ optimism is a function of a reliability level of a particular component, rather than its magnitude. The results from our main tests suggest that operating accrual-related optimism is offset by financial accrual-related pessimism while the forecast errors associated with total accruals are statistically insignificant from zero. Our findings also indicate that the relations between forecast errors and accrual components are moderated by firm specific unconditional and conditional reporting conservatism. We find that the operating accrual-related optimism further increases and financial accrual-related pessimism decreases for firms with relatively higher unconditional conservatism. On the other hand, we find that conditional conservatism plays little role for operating accrual-related optimism while it further increases financial accrual-related pessimism.

1. Introduction

In this paper we investigate analysts' strategic use of information in accruals' components. A number of prior studies examines the relation between analysts' forecasts of earnings and accruals. For example, Bradshaw et al. (2001) investigate whether analysts' forecasts incorporate predictable earnings reversals associated with working capital accruals and document that analyst are over-optimistic about future prospects of firms with high working capital accruals. Similar evidence is provided by a body of research (e.g., Collins et al., 2003, Elgers et al. 2003, Hanlon, 2005, Mashruwala et al. 2006 and Thomas and Zhang, 2002) that builds on Bradshaw et al. (2001) and interprets the findings as analysts' lack of necessary sophistication to understand the implication of high accruals for future earnings. On the other hand, there is a large literature which argues that analysts behave strategically and issue optimistic forecasts due to incentives to curry favour with firm managers (Francis and Philbrick 1993, Richardson, Teoh and Wysocki, 2004, Zhou, 2012). A related set of studies finds that analysts issue more optimistic forecasts for firms whose earnings are more difficult to predict (Das et al., 1998, Ke and Yu, 2006), and that the difficulty of forecasting earnings interacts with analysts' incentives to be optimistic which in turn, results in optimistically biased forecast errors (Bradshaw et al., 2014). Our study is related to each of these literatures and its objective is to investigate whether the varying levels of reliability of accrual components explain analysts' strategic behaviour. We start from the well documented predisposition that analysts have incentives to issue optimistic forecasts and will do so when they hold favourable views of the firms they follow. At the same time, analysts' objective is to provide the most accurate forecasts by minimizing the mean absolute forecast error since forecast accuracy is one the most important indicators of analyst forecast performance (Gu and Wu, 2003). We assume that, in the process of producing earnings forecasts, analysts distinguish between operating and financing accruals and give consideration to the relative reliability and predictability of their different components. We employ a comprehensive categorization of accruals provided by Richardson et al. (2005) in which each accrual category is rated according to its persistence and reliability. Richardson et al. (2005) find that less reliable accruals lead to lower earnings persistence, and argue that a narrow definition of accruals focused on working capital accruals ignores a variety of non-current operating and financial assets and liabilities which results in noisy measures of both accruals and cash flows. In contrast, research that studies relations between analysts' earnings forecasts and accruals (e.g., Bradshaw et al., 2001, Drake and Myers, 2011) focuses on working capital accruals only, based on an argument that working capital accruals do a better job, relative to total accruals, of capturing the accruals that lead to earnings reversals that are unanticipated by investors. For example, Bradshaw et al. (2001) argue that total accruals include a number of special items such as accruals associated with restructuring and asset impairments, which tend to be non-recurring items on the income statement and thus more likely to be anticipated by investors. However, a more recent evidence in Doyle et al. (2003) suggests that such "special" accruals (e.g., estimated severance costs in restructuring, equity method losses, etc.) omitted from the conventional accrual definition (Sloan, 1996) are far from nonrecurring or unimportant for anticipating future stock returns. In fact, the findings documented in Doyle et al., (2003) show that firms with relatively large omissions of such items in their definitions of pro forma earnings suffer relatively lower stock returns over the next three years and that the investors do not fully appreciate the predictive power of such "special" accruals. We draw on the findings by Doyle et al. (2003) and give consideration to both current and non-current operating accruals in our analysis of analysts' behaviour with respect to accruals. In addition to operating accruals, Richardson et al.'s (2005) definition includes accruals related to non-cash financial assets (e.g., investments in long-term bonds) and liabilities (e.g., long-term debt) which are generally measured with high reliability, which form part of earnings (e.g., accrued interest revenue and expense), and which we take into account as an important factor that helps explain analysts' strategic use of accruals.

We argue that inherent properties of operating accruals provide scope to incentive-driven optimism in earnings forecasts. Namely, operating accruals are related to core business activities, and analysts tend to select and recommend firms when they are optimistic about firms' future business prospects. In addition, operating accruals include a variety of items, which contain subjective and unreliable estimates (e.g., allowances for bad debt, cost allocations of inventory, capitalized internally generated intangibles, etc.), that also give rise to unintentional optimistic errors because analysts face greater difficulty in forecasting operating accruals. Hence, with respect to operating accruals we agree with the argument that the combined effect of incentives to be optimistic and forecast difficulty results in optimistic errors (Bradshaw et al., 2014) and we extend this argument by drawing a link between the notion of forecast difficulty and the degree of accrual reliability. However, we find that this argument addresses only one side of the coin. Analysts are likely to be aware of the probability of making optimistic errors with respect to operating accruals, and at the same time they are motivated to arrive at the most accurate forecasts given that the accuracy is the key indicator of their performance. Analysts are also likely to be aware of the high degree of reliability of financial accruals, which as a result associates them with smaller unintentional forecast errors, and which makes them a potential useful channel trough which analysts might manage forecasts to achieve zero or small forecast error. Therefore, we predict that analysts' optimism with respect to operating accruals triggers incentives to strategically infuse financial accruals with pessimism to offset the overoptimistic error. In order words, we argue that analysts have different incentives in using operating versus financial accruals forecasts as instruments to arrive at the desired forecast of earnings.

The empirical analysis begins by replicating the results in Richardson et al. (2005) to measure the degree of reliability for individual accrual components. Next, we employ the analysts forecast error tests from Bradshaw et al. (2001) which we amend by using total instead of working capital accruals and extend by breaking total accruals into components with varying degrees of reliability. Consistent with prior literature (Bradshaw et al., 2001, Drake and Myers, 2011) we find a negative association between analysts forecast errors and working capital accruals, which is indicative of analysts' optimism. We also find analysts optimism with respect to non-current operating accruals. Moreover, we find that the strength of the negative association between forecast errors and individual operating accrual components increases as the degree of reliability of the particular accrual component decreases. In other words, analysts' forecasts optimism with respect to operating accruals appears to be driven by the level of reliability. Our main empirical prediction is tested by examining whether the forecast optimism related to operating accruals is offset by forecast pessimism with respect to financial accruals. As predicted, we find that forecast errors exhibit financial accrual-related pessimism simultaneously with operating accrual-related optimism, while the errors associated with total accruals are statistically insignificant from zero. Finally, we investigate whether observed relations between forecast errors and accrual components are moderated by firm specific reporting conservatism level. We use two measures of conservatism: unconditional measured by hidden reserves as in Penman and Zhang (2002) and conditional measured by Khan and Watts's (2009) *C_score.* We find that operating accrual-related optimism further increases and financial accrual-related pessimism decreases for firms with relatively higher unconditional conservatism (e.g., reflected in unrecorded goodwill) which is expected as analysts are more optimistic in general about firms that offer relatively better future prospects. On the other hand, we find that conditional conservatism plays little role for operating accrual-related optimism while it further increases financial accrual-related pessimism.

The sensitivity analysis reports analysts' pessimism with respect to cash flows which are the most persistent and reliable among all earnings components. We interpret the results as an indication of analysts' strategic behaviour which is reflected in their differential treatment of particular earnings components conditional on the degree of reliability of the individual component. Our results remain robust after controlling for specific firm characteristics that are considered relevant for earnings forecasts, and after employing a bank of sensitivity analysis tests. Overall, these findings suggest that analysts understand information embedded in accruals and use it strategically in their earnings forecasts.

Our paper makes the following contributions to the existing knowledge. First, we build on the findings by Bradshaw et al. (2001), by showing that analysts' forecasts optimism extends to non-current operating accruals and that the reliability of individual accrual components is important to explain the variation of operating accrual-related optimism. Second, our results reveal that analysts forecast errors are mainly driven by accrual *reliability* rather than by the magnitude[1], i.e., we show that high magnitude of an accrual component does not necessarily lead to larger forecast errors (and larger negative stock returns) if the reliability of the component is high. This finding provides further support to Richardson et al. (2005) who link the persistency of accruals to the reliability concept of accounting, and document that as the persistency decreases investors suffer bigger losses. Third, we demonstrate that operating accrual-related optimism is mitigated by financial accrual-pessimism which results in more accurate earnings forecasts in the aggregate, and which is indicative of analysts understanding properties and implications of various accrual components and acting strategically to minimize the forecast error.

Finally, we demonstrate that analysts give consideration to conservative accounting that shapes the manner in which firms' report accruals, and show that unconditional and conditional conservative accounting practices have different forecasting implications where unconditional conservatism leads to greater (smaller) optimism (pessimism) while conditional conservatism leads to greater financial accrual-related pessimism.

[1] Earnings fixation hypothesis suggests that investors fail to anticipate that high accruals do not persist in future which lead to lower subsequent earnings, and negative stock returns.

The remainder of the paper is organised as follow. The next section discusses prior literature and sets empirical predictions. Section 3 describes the data. Section 4 explains research design and presents the results. Section 5 reports sensitivity analyses and Section 6 concludes.

2. Hypotheses

Prior research on the analysts' understanding of accruals reports accrual-related optimism and generally explains this as analysts' lack of sophistication and experience to fully appreciate predictable earnings reversals associated with high accruals (Bradshaw et al., 2001, Drake and Myers, 2011). To an extent these results are consistent with the arguments in numerous accounting studies (e.g., Sloan, 1996) which claim that investors are optimistic about the firms with high accruals since they do not appear to anticipate future earnings decreases associated with high accruals. On the other hand, more recent research indicates that it might not be the accrual *magnitude* that drives investors' optimism. For example, Kraft et al. (2006) provide evidence that investors are optimistic about both high and low accruals, Konstantinidi et al. (2012) document that investors rationally distinguish between accruals and cash flows, and respond differently to their surprises. In the present study, we give consideration to these arguments and propose that analysts are likely to differentiate across a range of accruals with different properties, and that analysts' behaviour is likely to be influenced by a set of accruals' attributes other than their magnitude. We also note that the research on analysts' understanding of accruals (e.g., Drake and Myers, 2011), focuses on working capital accruals arguing that they better capture, relative to total accruals, items that lead to earnings reversals unanticipated by investors. Total accruals include a number of non-current items such as accruals associated with asset impairments and equity method losses, which Bradshaw et al. (2001) consider as typically non-recurring, flagged in the balance sheet, and hence likely to be anticipated by investors. On the other hand, evidence in Doyle et al. (2003) shows that these categories of accruals are far from non-recurring or unimportant for predicting future returns. They document that firms with relatively large omissions of such items from their pro forma earnings exhibit relatively lower future stock returns, which is indicative of investors not fully appreciating the predictive power of these accruals. Along the similar lines, Richardson et al. (2005) argue that the traditional accrual definition based on the working capital (Healy, 1985) is too narrow and document that omitting a large part of accruals such as non-current operating and financial accruals causes significant information losses. By using a comprehensive categorisation of accruals, they rate each accrual category according to the reliability of the underlying accrual components and demonstrate that less reliable accruals lead to lower earnings persistence. Their findings offer two major implications that we consider worth analysing in an attempt to explain analysts' behaviour. First, if analysts use all relevant information to produce forecasts, then, they are likely to take into account all accrual components rather than working capital accruals only. Second, each accrual component has distinct reliability characteristics determined mainly by the underlying component's nature. For example, inventories are subject to measurement errors more than bank loans, and hence less reliable regardless of their magnitude. Also, analysts are more likely to make unintentional errors when forecasting less reliable accruals, since they face greater difficulty in forecasting them. Evidence in Das et al. (1998) and Ke and Yu (2006) suggest that analysts issue more optimistic forecasts of earnings for firms whose earnings are more difficult to predict. Hence, given these arguments, we include all accrual information in our tests, and investigate whether analysts' forecasts are influenced by the varying degree of reliability of different accrual parts.

We build our argument on the well documented predisposition that analysts have incentives to issue optimistic forecasts and will do so when they hold favourable views of the firms' performance they follow (see for example Bradshaw (2011), Francis and Philbrick (1993), McNichols and O'Brian (1997), Michaely and Womack (1999), Hong and Kubic (2003)). Firms performance and future prospects are best captured by their operating activities (Feltham and Ohlson (1995), Nissim and Penman (2003), Penman et al. (2006)) which are core to the business, and which are strongly linked to firm's goodwill. We argue that analysts distinguish across accruals that reflect a range of operating and financial activities and have incentives to be optimistic with respect to operating accruals. Given that operating accruals include a number of components with a varying degree of reliability and that less reliable operating accruals are likely to be inherently more difficult to forecast, with respect to operating accruals, we agree with the argument that forecasting difficulty interacts with analysts incentives to be optimistic and results in optimistic forecast errors (Bradshaw et al., 2014). For example, operating accruals contain subjective estimates such as allowance for bad debt, cost allocation of inventory, capitalized internally generated software and other intangibles, which in forecasting open a scope for unintentional optimistic errors. The possibility of such errors is likely to be greater for less reliable accrual estimates, so we predict that analysts' accrual-related optimistic errors will increase as the degree of reliability of a particular accrual component decreases.

We recognize that analysts may have different incentives in forecasting operating versus financial accruals. Investors and analysts may not attribute the same degree of importance to financial accruals compared to operating accruals[2]. Also, by their nature, financial accruals (such as accrued interest revenue and expenses) are less subject to managerial discretion and estimation errors, and therefore more reliable compared to operating accruals. Analysts are aware of the high degree of reliability of financial accruals and they are likely to be less concerned about the subsequent realisations of financing compared to operating accruals. Our key hypothesis is based on the assumption that analysts act in a strategic manner to achieve minimum or zero forecast errors. We argue that analysts select earnings components which are less subject to unintentional errors and/or discretionary biases for strategic purposes because the desired outcomes of their strategies are then likely to be more accurate. Therefore, we hypothesize that analysts use financial accruals in a strategic manner by infusing them with pessimism in order to offset the operating accrual-related optimism[3].

Consider future actual earnings X at time *t+1,* which consists of three components:

$$X = A^o + A^f + CF \qquad (2)$$

Where A^o and A^f denote operating and financial accruals respectively, while CF denotes cash flow. An analyst estimates a (draft) forecast of *X* between the announcements of time *t* and *t+1* actual earnings

$$FX = FA^o + FA^f + FCF \qquad (3)$$

Next, we define forecasts of accruals and cash flows as:

[2] Investors and analysts tend to pay attention to price multiples of accounting numbers that reflect operating activities such as P/EBIT, P/EBITDA and P/Sales (see for example Penman, (2007), Kim et al. (2012)).

[3] Matsumoto (2002) and Burgstahler and Eames (2006) provide evidence of the downward management of analysts' forecasts in order to achieve zero or small positive earnings surprises. While this evidence suggests analysts' strategic use of earnings forecasts, the actual channels (in terms of earnings components) through which such strategies are carried out, remain unexplored.

$$FA^o = A^o + e^o \quad (4)$$

$$FA^f = A^f + e^f \quad (5)$$

$$FCF = CF + e^{cf} \quad (6)$$

The forecast with the following properties is considered as the most accurate with regards to accruals (we do not make any assumption about *CF* at this stage):

$e^o = e^f = 0$, i.e., accrual related error terms are zero

$e^o + e^f = 0 \; or \; min.$, i.e., accrual related error terms offset each other

In our framework, the second option suggests a strategic treatment of accrual information by analysts where $e^o > 0$ reflects operating accrual-related optimistic errors, and $e^f < 0$ reflects strategic pessimistic errors.

2.1 Strategic forecasting and financial reporting

Analysts' understanding and use of accrual components is likely to be influenced by firms' financial reporting characteristics. One of the key attributes of financial reporting is accounting conservatism. The literature typically distinguishes between two forms of conservatism: conditional and unconditional. Conditional conservatism (Basu, 1997) is reflected in a greater sensitivity of contemporaneous earnings with regard to economic losses relative to gains implied by negative and positive stock value changes, and as a result, book values are written down when the news are bad, but not written up to the same extent, when the news are good. Under unconditional conservatism, accounting generates pervasive bias regardless of the news (Beaver & Ryan, 2005), and gives rise to hidden reserves (i.e., unrecorded goodwill) by means of an immediate expensing of R&D, creation of a LIFO reserve, etc.

Consistent with the argument presented above that analysts have incentives to be optimistic when they hold favourable views of the firms they follow, we investigate whether firms with relatively larger unconditional conservatism (i.e., unrecorded goodwill) are favoured relatively more by analysts. Since a firm's performance and future prospects are best captured by its operating activities, and since goodwill is mostly attributable to firm's operations, we test whether operating accrual-related optimism is greater for more unconditionally conservative firms. We measure unconditional conservatism by hidden reserves introduced by Penman & Zhang (2002).

Prior research also indicates that high unconditional conservatism leads to a less conditional conservatism (e.g., Beaver & Ryan, 2005; Roychowdhury & Watts, 2007), suggesting that each form of conservatism may reflect different aspects of variations in forecast errors. For example, Helbok & Walker (2004) document that analysts forecast bias is greater for firms with larger conditional conservatism, and Konstantinidi et al. (2012) document that the application of conditional conservatism causes asymmetry in the mean reversion of accruals, because immediately recognised losses are transitory shocks to the earnings process, which leads to a lower persistency of accruals. In the context of the present study, this evidence could imply that relatively less persistent accruals due to relatively larger conditional conservatism are likely to cause bigger forecast errors. To the extent that analysts are able to unravel future implications of firm's conditional conservatism and accordingly adjust earnings forecasts, considering that the asymmetric loss recognition is usually reflected in accounting numbers that capture operating activities, we expect operating accrual-related optimism to be smaller for firms that are consistently conservative. At the same time, timely loss recognition and the related lower persistency of operating accruals increase the possibility of unintentional forecast errors ($e^O > 0$). In order to minimize the overall unintentional error, we expect analyst to strategically reduce their forecasts with respect to financial accruals leading to relatively larger pessimistic errors $e^f < 0$ for firms with larger conditional conservatism. We measure firm specific conditional conservatism by the *C-Score* construct introduced by Khan & Watts (2009) and derived from the Basu (1997) model.

3. Data

The sample used for the tests consists of non-financial US firms for the period between 1976 and 2013. Financial statement data is obtained from Compustat annual database. Analysts forecast data is from the IBES summary statistics file and stock returns data are from CRSP daily files. To decompose earnings into components we rely on the accrual definition from Richardson et al. (2005)[4]:

$$Total\ accruals = \Delta WC + \Delta NCO + \Delta FIN \quad (7)$$

where ΔWC is the change in non-cash working capital, ΔNCO is the change in net non-current operating assets and ΔFIN is the change in net financial assets;

and rewrite equation (2) as:

$$X = \Delta WC + \Delta NCO + \Delta FIN + CF \quad (8)$$

where $\Delta WC + \Delta NCO = A^o$, and $\Delta FIN = A^f$ from equation (2).

Total accruals (*TACC*) can be further decomposed into their underlying components:

$$TACC_t = \underbrace{\Delta COA_t - \Delta COL_t}_{\Delta WC} + \underbrace{\Delta NCOA_t - \Delta NCOL_t}_{\Delta NCO} + \underbrace{\Delta STI_t + \Delta LTI_t - \Delta FINL_t}_{\Delta FIN} \quad (9)$$

All the variables are defined in Table A in the Appendix. Following Richardson et al. (2005), the missing data on short term debt, investment and advances, and long term debt are set to zero, while all other missing observations are eliminated. All earnings, accruals and cash flows variables are winsorised to +1 and -1 and deflated by average assets to eliminate extreme observations. Analyst forecast errors, conservatism proxies (*Hidden_reserves* and *C_Score)*, returns, and continuous control variables are winsorised to 1% and 99%. Our final sample contains 142,821 firm-year observations for the accrual reliability tests, and it ranges between 45,149 and 48,142 firm years for the forecast error regressions.

Table 1 Panel A sets out descriptive statistics for earnings (*ROA*), total (*TACC*), operating (*OPAC*), and financial *(ΔFIN*) accruals, working capital *(ΔWC*) and non-current *(ΔNCO*) accrual components. It also includes descriptives for conservatism proxies, *Hidden_reserves* and *C_Score.* Mean *TACC* is 0.051 or roughly 5% of total assets. Means of working capital accruals *(ΔWC*) and non-current operating accruals *(ΔNCO*) are positive while while mean finacial accruals *(ΔFIN*) is negative, which is indicative of an average firm increasing its non-current operations and financing this increase by net debt. Panel B reports pairwise

[4]Richardson et al. (2005) define accrual-based earnings through the definition of net assets: Accrual earnings = ΔAssets – ΔLiabilities + Net cash distribution. Given that Accruals = Accrual earnings – Cash earnings, and that Cash earnings = ΔCash + Net cash distribution, they define Accruals = ΔAssets –ΔLiabilities – ΔCash.

correlations, and reveals that all accrual components are positively correlated with *ROA*, with *ΔWC* having the highest correlation. The positive correlation between *ΔWC* and *ΔNCO* suggests that they grow together. Both *ΔWC* and *ΔNCO* are negatively correlated with *ΔFIN*, which is in line with the suggestion that growth in operating activities is largely financed by debt.

Table 2 presents the descriptive statistics and pairwise correlations for the extended accrual decomposition. Panel A shows that mean values of all accrual components are positive and that *ΔNCOA* (change in non-current assets) have the highest mean (0.055) while *ΔLTI* (change in long term investments), and *ΔCOA* (change in current operating assets) have the lowest means (0.002 and 0.004, respectively) suggesting that non-current operating accruals constitute the major part of accruals. Looking at the standard deviations of accruals, the results suggest that much of the variation in working capital accruals is attributed to *ΔCOA*. Similar pattern is found with respect to non-current operating accruals, which implies that the asset side of operating of accruals is more likely to be subject to measurement errors. In contrast, much of the variation in *ΔFIN* can be attributable to financial liability, *ΔFINL*. These observations suggest that the variation in operating accruals are driven by assets, while the variation in financial activity accruals are driven by liabilities.

Panel B of Table 2 reports pairwise correlations and shows strong correlation among accrual components. In particular, there is positive correlation between *ΔCOA* and *ΔCOL* suggesting that a growing (shrinking) business generally results in an increase (decrease) in both current operating assets and liabilities. There is also a positive correlation between *ΔCOA* and *ΔFINL* suggesting that current operations are not only funded by operating liabilities, but also by financial debt. Moreover, *ΔNCOA* is positively correlated with all liability accruals[5].

4. Empirical analysis

Following previous work in the area, notably Bradshaw et al. (2001) and Richardson et al. (2005) an association study is conducted in order to assess the relative degree of reliability of

[5] Note that the liability component of accruals is substracted from the asset component to arrive at net accruals. Hence, a positive relation between an asset and a liability implies that they are likely to offset each other's effect on net accruals.

each accrual component. As a first step, to check the relative persistance of total accruals and cash flows, we estimate the following model from Richardson et al. (2005):

$$ROA_{t+1} = \gamma_0 + \gamma_1(ROA_t - TACC_t) + \gamma_2 TACC_t + \vartheta_{t+1} \quad (10)$$

Where *ROA* represents earnings scaled by total assets, $(ROA - TACC)$ cash flows, and *TACC* *t*otal accruals. As accrual component is expected to be less persistent than the cash flow component of earnings, the prediction is: $(\gamma_2 - \gamma_1) < 0$. Next, to measure the relative persistence of each accrual component model (10) is expanded as follows:

$$ROA_{t+1} = \gamma_0 + \gamma_1(ROA_t - \Delta WC_t - \Delta NCO_t - \Delta FIN_t)$$
$$+\gamma_2 \Delta WC_t + \gamma_3 \Delta NCO_t + \gamma_4 \Delta FIN_t + \vartheta_{it+1} \quad (10a)$$

In equation (10a) the coefficient γ_1 measures the persistence of the cash flow component, while$(\gamma_2 - \gamma_1)$, $(\gamma_3 - \gamma_1)$, and $(\gamma_4 - \gamma_1)$ measure the persistence of *ΔWC*, *ΔNCO,* and *ΔFIN* relative to cash flow component, respectively. To directly estimate γ_k (where k = 2, 3, and 4) relative to γ_1, we rewrite equation (10a) and fit the following model:

$$ROA_{t+1} = \rho_0 + \rho_1 ROA_t + \rho_2 \Delta WC_t + \rho_3 \Delta NCO_t + \rho_4 \Delta FIN_t + \vartheta_{it+1} \quad (10b)$$

We conduct our regression analyses using ordinary least squares (OLS) and cluster standard errors by firm and year following Petersen (2009)[6]. In the robustness tests, we also employ the Fama & MacBeth (1973) procedure.[7]

Results are reported in Table 3. Results in panel A confirm prior findings that earnings are slowly mean reverting, and that the mean reversion of accruals are quicker than cash flows, i.e., accruals are less persistent than cash flows (the persistence coefficient on *ROA* is 0.80

[6] Petersen (2009) method deals with the potential time and firm effects that can be present in panel data sets. Firm effect (or time series dependence) means the residuals may be correlated across years for a given firm, and time effect (or cross sectional dependence) means the residuals of a given year may be correlated across different firms. He documents that in the presence of both firm and time effects, clustering the standard errors by two dimensions simultaneously yields the *unbiased estimates* as long as there are sufficient number of clusters. For more information about clustering the standard errors, see Petersen (2009), and to obtain the programming advice visit http://www.kellogg.northwestern.edu/faculty/petersen/htm/papers/se/se_programming.htm

[7] Fama & McBeth (1973 procedure estimates annual cross sectional regressions and report the time series average of the resulting coefficients.

while the coefficient on *TACC* is negative, and both are significant at 1% level). Panels B and C report persistence results for the accrual decomposition to *ΔOPAC* and *ΔFIN*, and to *ΔWC, ΔNCO*, and *ΔFIN*, respectively. Consistent with the Richardson et al. (2005) and as predicted the results indicate that operating accruals are less persistent than financial accruals. For example, Panel C shows that the magnitude of the persistence coefficients ranges from -0.137 for *ΔWC* to -0.045 for *ΔFIN* (all with p-values<0.01). Finally, Panel D sets out the results for the extended accrual decomposition and reports the relative persistence of each accrual component. The coefficients on *ΔCOL* and *ΔCOA* are the lowest (-0.177 and -0.132, both significant at 1% level), while the coefficients on *ΔCOL* and *ΔNCOA* are -0.097 and -0.077, respectively (both significant at 1%). With regards to financial accruals, a similar pattern is observed: the coefficient ranges from -0.059 for *ΔLTI* (which includes less reliable items such as long term receivables), to -0.034 for *ΔSTI* (e.g., marked-to-market short term investments). In summary, the preceding analysis provides two objectives. First, the results confirm the reliability ranks of accruals from Richardson et al. (2005) which range from the least (working capital) to the most (financial) accruals. Second, the findings provide us with the measure of reliability for each accrual components which we use to explain analysts strategic behaviour with respect to accruals below.

We employ Bradshaw et al. (2001) methodology to investigate the relation between analysts forecast errors and individual accrual components. We use IBES consensus median forecast earnings and measure forecast error as the difference between realized earnings in year *t+1* and monthly analysts expectation of earnings for the forthcoming year *(t+1)* immediately after the release of year *t* earnings. We deflate all forecast errors by stock prices from CRSP at the end of year *t*. We regresses 12 consecutive months' forecast errors on current period *t* accrual components as follows:

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta WC_{it} + \beta_2 \Delta NCO_{it} + \beta_3 \Delta FIN_{it} + \varepsilon_{it+1} \quad (11)$$

Our main empirical prediction is that analysts' optimism with respect to operating accruals triggers incentives to infuse financial accruals with pessimism to offset the overoptimistic error. In equation (11) a negative forecast error indicates that the forecast is optimistic. Therefore, we expect negative coefficients on *ΔWC* and *ΔNCO* and a positive coefficient on *ΔFIN*. The results are reported in Table 4. In line with our predictions, analysts' optimism prevails in *WC* accruals; the coefficients on *ΔWC* are negative and significant across 12 months, while the coefficients on *ΔNCO* are not statistically different from zero. Analyst optimism is driven by working capital accruals as predicted that are less persistent, less reliable and more difficult to predict than non-current operating activity accruals. Since current operations are more likely to provide relevant information about firm's daily activities, cash flows, profitability, operating cycle, liquidity, etc., analysts' focus on current operations is expected. Also, the results in Panel A also confirms that the strength of association between forecast errors and accrual components is gradually decreasing as time horizon extends consistent with previous research (e.g. Bradshaw et al., 2001) since the actual earnings outcome become more predictable. To empirically check the offsetting effects between operating-accrual related optimism and financial-accrual related pessimism, we regress forecast errors on total accruals. Results reported in Panel B of Table 4 reveal that, in the aggregate, analysts forecast errors are not associated with total accruals. The relation is statistically and economically zero across all 12 months confirming our prediction. Next, to empirically test the relation between analysts optimism and the degree of reliability of particular accrual components we rerun regression model (11) extending the accrual decomposition of *ΔWC* and *ΔNCO* into their asset and liability parts. The results reported in Table 5 show significant analyst optimism with respect to current operating asset accruals (*COA*), current operating liability accruals (*COL)*, and also non-current operating liability accruals (*NCOL)*. More importantly, the results reveal a pattern where operating accrual-related optimism decreases as the degree of persistence of an individual component increases. For example, analysis in Panel D, Table 3 suggests that *ΔCOL* is relatively less persistent and reliable (e.g. *ΔCOL* is likely to include various short-term provisions whose future implications are relatively more difficult for analyst to predict), than *ΔCOA* which is less persistent than *ΔNCOL* while *ΔNCOA* seems to be the most reliable operating accrual component (i.e., long-term operating assets are usually the most straightforward to measure). The relative rankings of persistence coefficients on the accrual components line up closely with their counterparts in Table 5: optimistic errors are the largest for the least persistent components, and they monotonically decrease as the persistence rank of a particular accrual component increases[8].

[8] Untabulated *F-tests* reveal that the coefficients in table 10 are different from each other.

Next, to check whether the findings in main tests remain robust if we incorporate firm specific controls, we re-estimate equation (11) with the extended accrual decomposition controlling for firm size, beta, B/P, leverage, loss dummy, E/P and past returns with industry fixed effects. All the control variables are defined in Table A of the Appendix. The regressions are run for the first month just after the announcement of year *t* earnings. Table 6 reports the results and reveals several findings. First, the explanatory power of regressions increases significantly with controls. All controls are significantly associated with forecast errors, and the signs of coefficients on control variables are generally consistent with prior research except for the signs of past year returns (e.g., Abarbanell, 1991), firm size (e.g., Keskek & Tse, 2013), and beta (e.g., Ljungqvist, Marston, Starks, Wei, and Yan, 2007). Finally, the main coefficients capturing analyst optimism/pessimism remain robust. One exception is that, when all controls are incorporated, financial accrual-related pessimism with respect to *ΔFINL* diminishes. The unreported tests reveal that this drop in pessimism can be explained by relatively high leverage, which in turn is related to relatively higher future earnings and profitability.

4.1 Effects of accounting conservatism

The next set of tests investigates whether relations between forecast errors and accruals components are moderated by firm specific conservatism level. To measure unconditional conservatism we compute $Hidden\_Reserves_t = R\&Dres_t + ADVres_t + LIFOres_t$ from Penman and Zhang (2002, 2013). The definitions of the variables are provided in Table A of the Appendix. To measure conditional conservatism we estimate the model suggested by Khan and Watts (2009) based on Basu's (1997) measure of asymmetric timeliness of bad relative to good news ($X_{it} = \beta_1 + \beta_2 D_i + \beta_3 R_{it} + \beta_4 D_i R_{it} + e_{it}$, where the asymmetric timeliness is measured by the differential coefficient β_4)[9]. Since firm-specific characteristics - size, market to book ratio and leverage – have been found to significantly affect conservatism, Khan & Watts (2009) transform the Basu (1997) model to obtain weights used to aggregate firm characteristics into annual firm-specific measures of timeliness[10]:

$$X_t = \beta_1 + \beta_2 D_i + R_i(\mu_1 + \mu_2 Size_i + \mu_3 M/B_i + \mu_4 lev_i D_i) + D_i R_i(\gamma_1 + \gamma_2 Size_i + \gamma_3 M/B_i + \gamma_4 lev_i) + \delta_1 Size_i + \delta_2 M/B_i + \delta_3 Lev_i + \delta_1 D_i Size_i + \delta_2 D_i M/B_i + \delta_3 D_i Lev_i + e_{it}$$

[9] See Basu (1997) for the model development.

[10] See Khand and Watts (2009) for the model's development and the validation of the conservatism score.

Asymmetric timeliness with respect to bad news (*C_Score*) is a linear function of firm-specific characteristics and calculated for each firm and year:

$$\boldsymbol{C\_Score \equiv \beta_4 = \gamma_1 + \gamma_2 Size_i + \gamma_3 {}^{M_i}/_{B_i} + \gamma_4 lev_i}$$

The definitions of the variable are in Table A. To distinguish between firms with high versus low unconditional (conditional) conservatism, we group the sample into quintiles based on the magnitude of *Hidden_reserves (C_score)* for the first three months of year *t* before the announcement of quarterly earnings and we scale the quintiles to a (0,1) range so that the lowest (highest) quintile is assigned a value of 0 (1). We also independently stratify the sample into quintiles based on the magnitude of accruals in year *t* for each accrual component *(ΔWC, ΔNCO* and *ΔFIN*). We then extend the main forecast error model (11) including quintile conservatism ranking and its interactions with each of the accrual components *(ΔWC, ΔNCO* and *ΔFIN*) quintiles, respectively:

$$Ferror_{1,it+1} = \beta_0 + \beta_1 D_i + \sum_{k=1}^{3} \delta_k QACC_{it} + \sum_{j=1}^{3} \gamma_k D_i * QACC_{it} + \varepsilon_{it+1} \qquad (12)$$

Where *QACC* is a particular accrual component quintile and *D* is a conservatism dummy which differentiates between low and high *Hidden_reserve (C_score)* firm-years, as explained above. Based on our hypotheses in Section 2.1 the empirical predictions are as follows. With respect to *Hidden_Reserve* we expect the coefficient γ_k to be significantly negative indicating (i) larger operating accrual-related unconditional conservatism and (ii) a mitigating effect on financial accrual-related pessimism. With respect to *C_Score* we expect for firms that are consistently conservative, a significantly positive γ_k which is indicative of relatively smaller operating accrual-related optimism and relatively larger financial accrual-related pessimism. The results provided in Table 7 provide support for our predictions. For example, for firms with high *Hidden_reserves*, the optimism is increasing in working capital (the coefficient on the interaction *D*QΔWC* is -0.021 and statistically significant at the 5% level), while the financial accrual-related pessimism is decreasing (e.g., the average pessimistic error drops from 4% for firms with low hidden reserves to 1.1% for firms with high hidden reserves). On the other hand, we find no evidence of analysts reducing operating accrual-related optimisms for high *C_score* firms, but they do appear to be incrementally pessimistic with respect to financial accruals (on average the pessimistic error for high *C_score* firms is 3.6% compared to the 1.6% for low *C_score* companies).

5. Sensitivity analyses

The empirical analysis so far has found that analyst forecasts are pessimistic with respect to financial accruals which by nature are close to cash flows. As a sensitivity analysis, we now test whether forecast with respect to cash flow component of earnings are also pessimistic, and whether the pessimistic bias is relatively higher compared to financial accruals. This test is conducted by fitting the following models.

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta OPAC_{it} + \beta_2 \Delta FIN_{it} + \beta_3 CF_{it} + \varepsilon_{it+1} \quad (13)$$

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta LTI_{it} + \beta_2 \Delta FINL_{it} + \beta_3 \Delta STI_{it} + \beta_4 CF_{it} \quad (14)$$

In line with the hypotheses explained in Section 2 that analysts are prepared to use more reliable earnings components in a strategic manner in order to offset the operating accrual-related optimisms, we expect positive coefficients on *CF*. We also expect that the coefficient on *CF* is higher in magnitude than coefficients on *ΔFIN*, *ΔLTI*, *ΔFINL* and *ΔSTI*, respectively, which is indicative of analysts strategically using earnings components that are associated with least chances of unintentional or discretionary errors to. Results reported in Panels A and B in Table 8 are consistent with our predictions. For example, coefficients on *CF* are positive and significant ($p < 0.01$) across 12 months, and highest relative to all other coefficients from both equations.

Another set of robustness tests investigates whether investors anticipate the implications of operating and financial accruals for future earnings. Prior research (Richardson et al., 2005) provides evidence that investors behave in a naïve manner and fail to anticipate lower persistence of less reliable accrual components which results in negative future stock returns (i.e., in a negative relation between less persistent accruals and future returns). To check the validity of our hypothesis of analysts' strategic use of accruals we examine whether investors behave in a similar manner to analysts. We argue that there is no reason for investors to be optimistic with respect to operating and at the same time strategically pessimistic with respect to financial accruals. Therefore, while we do expect a negative relation between less persistent accruals and future returns we *do not* expect a positive relation between financial accruals and future returns. The following model tests these predictions:

$$Ret_{it+1} = \beta_0 + \sum_{k=1}^{n} \beta_k ACC_{it} + \sum_{j=1}^{m} \beta_{k+j} X_{it} + \varepsilon_{it+1} \quad (15)$$

Where *X* denotes control variables (firm size, market *Beta*, *B/P*, *E/P* and past returns), *Ret* is the size-adjusted 12 months stock returns for firm *i* at time *t+1* calculated as the buy-and-hold returns inclusive of dividends minus the buy-and-hold returns on value-weighted decile portfolios. Return accumulation starts in the fourth month after the fiscal year end, and continues for the next twelve months. Panels A and B of Table 9 report the results which show that market is optimistic with regard to all accrual components (and total accruals in Panel A), and that the least persistent accruals are the most negative and significant. Contrary to the results from forecast errors regressions we find no financial accrual-related pessimism. These findings provide additional support to our argument that analysts do strategically use accrual information. Panel B also shows that the relative order of the coefficients on the accrual components follows a similar pattern found in Richardson et al. (2005) who document that the negative relation between accruals and future stock returns is stronger for less persistent accruals. Furthermore, the coefficients are higher in magnitude compared to the ones from the forecasts error regressions which lends support to the argument that analysts are more sophisticated users of accrual information relative to market investors (Elgers et al., 2001, 2003)[11].

In further robustness tests we replace actual values of accruals with their decile ranks in forecast error regressions following prior literature (e.g., Abarbanell & Bushee, 1998; Bradshaw et al., 2001; Collins et al., 2003). We group firms annually in 10 portfolios based on the magnitude of accruals in year *t*, and scale them to a (0,1) range[12] so that lowest (highest) accrual firm-years are assigned a value of 0 (1). The scaling is used to alleviate nonlinearities in the data, and to minimize the effects of measurement errors. The intercept in the decile rank regressions measures the average forecast error for a low accrual firm-year while the coefficient on the particular accrual component rank measures the average incremental forecast errors for a high versus a low accrual firm-year. Results set out in Panels A and B of Table 10 show the same patterns as those observed in Tables 4 and 5. Overall, the findings indicate that it is the accrual persistence rather than their magnitude which drives the forecast errors[13].

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[11] Unreported tests which control for regulatory changes such as the enactment of *Regulation Fair Disclosure* and *the Global Analyst Research Settlement* in 2002 reveal that the results remain robust.

[13] We also run regressions using Fama & MacBeth (1973) cross sectional regressions and report the time series average of the resulting coefficients. The results remain robust. Tests are also conducted using the data post

6. Conclusion

In this paper we examine analysts' strategic use of information in accruals' components. Specifically, we investigate whether analysts' optimism with respect to operating accruals triggers incentives to strategically infuse financial accruals with pessimism to offset the overoptimistic error. We extend the work by Bradshaw et al. (2001) and Drake and Myers (2011) by using total instead of working capital accruals and by breaking total accruals into components with varying degrees of reliability using the approach from Richardson et al. (2005). Our analysis reveals that the negative relation between operating accrual components and forecast errors, i.e., analysts' optimism is a function of a reliability level of a particular component, rather than its magnitude. The results from our main tests suggest that operating accrual-related optimism is offset by financial accrual-related pessimism while the forecast errors associated with total accruals are statistically insignificant from zero. Our findings also indicate that the relations between forecast errors and accrual components are moderated by firm specific unconditional and conditional reporting conservatism. We find that the operating accrual-related optimism further increases and financial accrual-related pessimism decreases for firms with relatively higher unconditional conservatism. On the other hand, we find that conditional conservatism plays little role for operating accrual-related optimism while it further increases financial accrual-related pessimism.

1993 in order to check whether the main findings alter after the change in IBES's method of calculating earnings (Konstantinidi et al. 2012). The results confirm the initial findings.

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Appendix

Table A – Variable definitions

Dependent Variables	
ROA	Operating income after depreciation (Compustat Item OIADP, #178) deflated by average assets (Compustat Item AT, #6).
Ferror	Realized earnings for year t+1 less forecasted consensus (median) earnings in month *s (s=1, 2, 3, …., 12)*, scaled by the stock price in month *s=1*. Month *s=1* is the first month following prior year's earnings announcement. $Ferror_{s,t+1} = [Actual\ EPS_{t+1} – Forecast\ EPS_{s,t+1}] / P_{1,t}$
Independent Variables	
TACC	Change in non-cash assets - change in liabilities, deflated by average assets.
ΔOPAC	Operating accruals is the change in non-cash working capital (ΔWC_t) plus change in net non-current operating assets (ΔNCO_t), deflated by average assets.
ΔWC	Working capital accruals is the change in net working capital = WC_t - WC_{t-1}. *WC* is current operating assets (*COA*) less operating liabilities (*COL*). *COA*=current assets (Compustat Item ACT, #4) - cash and short term investments (Compustat Item CHE, #1), and *COL*=current liabilities (Compustat Item LCT, #5) - short term debt (Compustat Item DLC, #34).
ΔNCO	Non-current operating accruals is the change in net non-current operating assets = NCO_t - NCO_{t-1}. *NCO* is = non-current operating assets (*NCOA*) - non-current op.liabilities (*NCOL*). *NCOA*=total assets (Compustat Item AT, #6) - current assets (Compustat Item ACT, #4) - investments and advances (Compustat Item IVAO, #32), and *NCOL*=total liability (Compustat Item LT, #181) - current liabilities (Compustat Item LCT, #5) - short term debt (Compustat Item DLC, #34) - long term debt (Compustat Item DLTT, #9)
ΔFIN	Financing accruals is the change in net financial assets = FIN_t -FIN_{t-1}. *FIN*=financial assets (*FINA*) - financial liabilities (*FINL*). *FINA*=short term investments (STI) (Compustat Item IVST, #193) + long term investments (LTI) (Compustat Item IVAO, #32). *FINL*= long term debt (Compustat Item DLTT, #9) + short term debt (Compustat Item DLC, #34) + preferred stock (Compustat Item UPSTKC, #130)
C_Score	Conditional accounting conservatism proxy varying across

firms and years developed by Khan & Watts (2009) and derived from Basu's (1997) asymmetric timelines of earnings measure:

$$C\_Score_{it} \equiv \beta_4 = \gamma_1 + \gamma_2 Size_{it} + \gamma_3 {}^{M_{it}}/_{B_{it}} + \gamma_4 lev_{it}$$

The parameters are calculated using the following annual cross sectional regression model

$$X_t = \beta_1 + \beta_2 D_i + \beta_3 R_i(\mu_1 + \mu_2 Size_i + \mu_3 M/B_i + \mu_4 lev_i D_i)$$

$$+\beta_4 D_i R_i(\gamma_1 + \gamma_2 Size_i + \gamma_3 M/B_i + \gamma_4 lev_i) + \delta_1 Size_i$$

$$+\delta_2 M/B_i + \delta_3 Lev_i + \delta_4 D_i Size_i + \delta_5 D_i M/B_i + \delta_6 D_i Lev_i + e_{it}$$

Where X is earnings before extraordinary items (Compustat Item IB, #18) at time *t* deflated by market value at time *t-1*, where market value is calculated as the share price (Compustat item PRCC_F, #199) multiplied by the common shares outstanding (Compustat item CSHO, #25). *R* represents annual buy and hold returns inclusive of dividends and other distributions at time *t*, where accumulation period starts in the fourth month after the fiscal year end *t-1*, and continues for the next twelve months up to third month of fiscal year *t+1*. *D* is set to 1 if *R<0* and zero otherwise. The coefficient β_4 measures the incremental timeliness for bad news over good news, or conservatism. *E/P* is income at time *t* deflated by market value at time *t-1*. *Size* is the natural log of market value at time *t*, *leverage* is measured as long term debt (Compustat Item DLTT, #9) plus short term debt (Compustat Item DLC, #34)] divided by the market value at time *t*. *M/B* is calculated as market value at time *t* divided by the book value of equity at time *t*. Following Khan & Watts (2009), all firm years with missing data, negative total assets and book values are eliminated in estimations. Firms with price per share less than $1 are eliminated, and all variables are winsorised to 1% and 99%.

Hidden_Reserves

Unconditional accounting conservatism proxy by Penman & Zhang, (2002) deflated by average assets. It is calculated as:

$$Hidden\_Reserves_t = R\&Dres_t + ADVres_t + LIFOres_t$$

R&Dres is research and development reserve which is unamortised balance of R&D expenditures **(**Compustat Item

	XRD, #46) that would have appeared on balance sheet if it had been capitalised and amortised at a straight line rate of 20%, assuming a uniform distribution. $$R\&Dres_{it} = 0.9R\&D_{it} + 0.7R\&D_{it-1} + 0.5R\&D_{it-2} + 0.3R\&D_{it-3} + 0.1R\&D_{it-4}$$ *ADVres* is advertisement reserve calculated using advertisement expenditures (Compustat Item XAD, #45) assuming a useful life of two years, and providing more benefits when first initiated $$ADres_{it} = ADV_{it} + 1/3ADV_{it-1}$$ *LIFOres* is LIFO reserves reported in the inventory footnotes in financial reports (Compustat Item LIFR, #240).
Control Variables	
Size	Natural log of market value of equity. Market value is calculated as the share price (Compustat item PRCC_F, #199) multiplied by common shares outstanding (Compustat item CSHO, #25)
B/P	Book value of equity divided by market value of equity. Book value of equity = Common ordinary equity total (Compustat Item CEQ, #60) + Preferred treasury stock Current Assets (Compustat Item TSTKP, #227) + Preferred dividends in arrears (Compustat Item DVPA, #242).
Market Beta	Calculated through the 60 month rolling regressions using the market model $(Ret_{it} - R_f) = \alpha + \beta_i(Ret_{mt} - R_f) + \epsilon_{it}$ Ret is the CRSP monthly buy and hold returns for 12 month for stock *i* at time *t*, R_f is risk the free rate, $(Ret_{mt} - R_f)$ is the equity risk premium of the market portfolio. R_f is obtained from the US Federal Reserve, H15 report as the 10-year US Treasury bond rate for the relevant year. Ret_{mt} is the CRSP monthly value weighted return on a market portfolio cumulated over 12 months.
Past_return	Size adjusted past returns, calculated as the sum of 12-month buy and hold CRSP, NYSE, AMEX/NASDAQ stock returns from nine months before fiscal year-end *t* to three month after fiscal year-end *t* minus the corresponding value-weighted average returns for all firms in the same size-matched decile (returns are inclusive of dividends and other distributions). To form deciles market values are ranked annually, and assigned in equal numbers to ten portfolios. In tests, the variableis winsorised to %1 and %99.

E/P	Earnings to price ratio calculated as operating income after depreciation (Compustat Item OIADP, #178) at time *t* deflated by market value of equity at time *t-1*.
Loss_D	Loss dummy set to 1 if the past year earnings is negative and zero otherwise.
Leverage	Long term debt (Compustat Item DLTT, #9) plus short term debt (Compustat Item DLC, #34)] divided by the market value at time *t*.

Table 1
Descriptive statistics and correlations for ROA, accrual components, and conservatism measures

PANEL A: Descriptive statistics

	mean	std.dev.	25%	median	75%
ROA_{t+1}	0.045	0.214	0.007	0.08	0.14
ROA_t	0.043	0.186	0.002	0.076	0.136
$TACC_t$	0.051	0.195	-0.021	0.037	0.109
$\Delta OPAC_t$	0.063	0.195	-0.027	0.041	0.135
ΔFIN_t	-0.012	0.176	-0.071	-0.002	0.048
ΔWC_t	0.015	0.106	-0.024	0.008	0.052
ΔNCO_t	0.048	0.159	-0.015	0.021	0.084
C_Score_t	0.013	0.115	-0.052	0.012	0.081
$Hidden\_Reserves_t$	0.163	0.190	0.035	0.098	0.218

PANEL B: Correlation matrix—Pearson (above diagonal) and Spearman (below diagonal)

	ROA_{t+1}	ROA_t	$TACC_t$	$\Delta OPAC_t$	ΔFIN_t	ΔWC_t	ΔNCO_t	$C\_S_t{}^d$	H_R_t
ROA_{t+1}	-	0.75 ***	0.13 ***	0.09 ***	0.05 ***	0.01 ***	0.04 ***	-0.24 ***	-0.16 ***
ROA_t	0.79 ***	-	0.22 ***	0.18 ***	0.05 ***	0.20 ***	0.08 ***	-0.27 ***	-0.17 ***
$TACC_t$	0.23 ***	0.38 ***	-	0.69 ***	0.45 ***	0.40 ***	0.47 ***	-0.10 ***	-0.02 ***
$\Delta OPAC_t$	0.13 ***	0.27 ***	0.60 ***	-	-0.45 ***	0.60 ***	0.84 ***	-0.08 ***	-0.06 ***
ΔFIN_t	0.09 ***	0.08 ***	0.29 ***	-0.47 ***	-	-0.22 ***	-0.41 ***	-0.02 ***	0.04 ***
ΔWC_t	0.12 ***	0.23 ***	0.41 ***	0.63 ***	-0.27 ***	-	0.07 ***	-0.01 ***	-0.02 ***
ΔNCO_t	0.11 ***	0.22 ***	0.47 ***	0.80 ***	0.41 ***	0.16 ***	-	-0.12	-0.07 ***
C_Score_t	-0.02 ***	-0.02 ***	-0.08 ***	-0.06 ***	-0.01 ***	-0.01 ***	-0.06	-	0.05
$Hidden\_Reserves_t$	-0.39 ***	-0.43 ***	-0.05 ***	-0.08 ***	0.03 ***	-0.05 ***	-0.07 ***	0.00	-

Earnings and accruals sample consists of 142,633 firm-year observations, while Hidden_Reserves and C_Score samples consist of 98,196 and 96,324 firm-year observations respectively from 1976 to 2013. All earnings and accrual variables are deflated by average total assets and winsorised to +1 and -1, while C_Score and Hidden_Reserves are winsorised at 15 and 99%. Table A in the Appendix reports detailed variable definitions. *** denotes statistical significance at the 1% level.

Table 2
Descriptive statistics and correlations for ROA and the extended accrual decomposition

PANEL A: Descriptive statistics

	mean	std.dev.	25%	median	75%
ΔCOA_t	0.004	0.132	-0.01	0.022	0.081
ΔCOL_t	0.025	0.09	-0.009	0.015	0.051
$\Delta NCOA_t$	0.055	0.163	-0.012	0.025	0.091
$\Delta NCOL_t$	0.006	0.049	-0.001	0.001	0.011
ΔSTI_t	0.007	0.105	0	0	0
ΔLTI_t	0.002	0.047	0	0	0
$\Delta FINL_t$	0.021	0.141	-0.023	0	0.051

PANEL B: Correlation matrix—Pearson (above diagonal) and Spearman (below diagonal)

	ROA_{t+1}	ROA_t	ΔCOA_t	ΔCOL_t	$\Delta NCOA_t$	$\Delta NCOL_t$	ΔSTI_t	ΔLTI_t	$\Delta FINL_t$
ROA_{t+1}	-	0.75 ***	0.11 ***	0.04 ***	0.05 ***	0.02 ***	0.03 ***	0.02 ***	-0.03 ***
ROA_t	0.79 ***	-	0.16 ***	0.00	0.09 ***	0.01 ***	0.04 ***	0.02 ***	-0.02 ***
ΔCOA_t	0.20 ***	0.31 ***	-	0.60 ***	0.29 ***	0.08 ***	0.01	0.01 ***	0.33 ***
ΔCOL_t	0.15 ***	0.18 ***	0.57 ***	-	0.31 ***	0.07 ***	0.09 ***	0.03 ***	0.20 ***
$\Delta NCOA_t$	0.14 ***	0.25 ***	0.38 ***	0.35 ***	-	0.23 ***	-0.01	-0.01 ***	0.51 ***
$\Delta NCOL_t$	0.15 ***	0.19 ***	0.14 ***	0.11 ***	0.31 ***	-	0.01 ***	0.06 ***	0.03 ***
ΔSTI_t	0.07 ***	0.09 ***	-0.02 ***	0.08 ***	-0.02 ***	0.02 ***	-	-0.02 ***	0.03 ***
ΔLTI_t	0.02 ***	0.04 ***	0.03 ***	0.04 ***	0.02 ***	0.06 ***	0.00	-	0.08 ***
$\Delta FINL_t$	-0.04 ***	-0.04	0.32 ***	0.17 ***	0.05 ***	0.11 ***	-0.02 ***	0.05 ***	-

The sample consists of 142,821 firm-year observations from 1976 to 2013. All earnings and accrual variables are deflated by average assets and winsorised to +1 and -1. Variable definitions are provided in Table A in the Appendix. *** denotes statistical significance at the 1% level.

Table 3
Accrual components persistence tests

PANEL A: Cash flows and total accruals persistence

$ROA_{it+1} = \rho_0 + \rho_1 ROA_{it} + \rho_2 TACC_{it} + \vartheta_{it+1}$

	intercept	*ROA*	*TACC*	R^2
mean coef.	0.008	0.797 ***	-0.068 ***	0.632
		99.11	*-16.15*	

PANEL B: Operatig and financial accruals persistence

$ROA_{it+1} = \rho_0 + \rho_1 ROA_{it} + \rho_2 \Delta OPAC_{it} + \rho_3 \Delta FIN_{it} + \vartheta_{it+1}$

	intercept	*ROA*	*ΔOPAC*	*ΔFIN*	R^2
			Low	High	
mean coef.	0.007	0.795 ***	-0.070 ***		0.631
			-16.35		
mean coef.	0.005	0.781 ***		0.005	0.629
				0.26	
mean coef.	0.009	0.801 ***	-0.089 ***	-0.047 ***	0.632
			-17.30	*-13.49*	

PANEL C: Working capital, non-current operating and financial accruals persistence

$ROA_{it+1} = \rho_0 + \rho_1 ROA_{it} + \rho_2 \Delta WC_{it} + \rho_3 \Delta NCO_{it} + \rho_4 \Delta FIN_{it} + \vartheta_{it+1}$

	intercept	*ROA*	*ΔWC*	*ΔNCO*	*ΔFIN*	R^2
mean coef.	0.007	0.791 ***	-0.122 ***			0.631
			-16.09			
mean coef.	0.008	0.782 ***		-0.051 ***		0.625
				-10.79		
mean coef.	0.005	0.777 ***			0.002	0.629
					0.26	
mean coef.	*0.009*	*0.804* ***	*-0.137* ***	*-0.065* ***	-0.045 ***	0.634
			-19.59	-12.32	-11.78	
Persistence Order			*Lowest*	*Medium*	*Highest*	

PANEL D: Individual accrual components persistence

$$ROA_{it+1} = \rho_0 + \rho_1 ROA_{it} + \rho_2 \Delta COL_{it} + \rho_3 \Delta COA_{it} + \rho_4 \Delta NCOL_{it} + \rho_5 \Delta NCOA_{it} + \rho_6 \Delta LTI_{it} + \rho_7 \Delta FINL_{it} + \rho_8 \Delta STI_{it} + \vartheta_{it+1}$$

	intercept	*ROA*	*(-)ΔCOL*	*ΔCOA*	*(-)ΔNCOL*	*ΔNCOA*	*ΔLTI*	*(-)ΔFINL*	*ΔSTI*	R^2
mean coef.	0.005	0.776 ***	-0.035 ***							0.62
			-4.03							
mean coef.	0.008	0.786 ***		-0.065 ***						0.63
				-11.3						
mean coef.	0.005	0.777 ***			-0.044 ***					0.62
					-4.52					
mean coef.	0.007	0.782 ***				-0.047 ***				0.62
						-10.17				
mean coef.	0.006	0.78 ***					-0.037 ***			0.63
							-4.45			
mean coef.	0.005	0.776 ***						0.010 ***		0.62
								2.00		
mean coef.	0.006	0.775 ***							-0.026 ***	0.62
									-5.53	
mean coef.	0.008	0.803 ***	-0.177 ***	-0.132 ***	-0.097 ***	-0.077 ***	-0.059 ***	-0.052 ***	-0.034 ***	0.63
t-stat			*-18.40*	*-19.11*	*-8.38*	*-14.21*	*-6.65*	*-9.46*	*-6.77*	
Persistence Order			*1 Lowest*	*2*	*3*	*4*	*5*	*6*	*7 Highest*	

Standard errors are clustered by firm and year using the Petersen (2009) approach. The sample consists of 142,821 firm-year observations fot 1976-2013, all earnings and accrual variables are deflated by average total assets and winsorised to +1 and -1. Variable definitions are provided in Table A of the Appendix. *** denotes statistical significance at the 1% level.

Table 4
Forecast errors and accrual components

PANEL A: Forecast errors, working capital, non-current operating and financial accruals

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta WC_{it} + \beta_2 \Delta NCO_{it} + \beta_3 \Delta FIN_{it} + \varepsilon_{it+1}$$

		m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept		-0.015 ***	-0.014 ***	-0.12 ***	-0.011 ***	-0.01 ***	-0.008 ***	-0.007 ***	-0.006 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***
	Persistence Order [a]												
ΔWC	*1 Low*	-0.039 ***	-0.038 ***	-0.033 ***	-0.027 ***	-0.025 ***	-0.026 ***	-0.023 ***	-0.019 ***	-0.015 ***	-0.013 ***	-0.011 ***	-0.010 ***
		-8.63	*-8.85*	*-5.98*	*-6.19*	*-6.27*	*-9.12*	*-8.52*	*-7.11*	*-6.73*	*-5.25*	*-3.82*	*-4.46*
ΔNCO	*2*	-0.001	0	-0.01	-0.007	-0.01	0	-0.01	-0.004	0	0	0	0
		-0.33	*-1.00*	*-1.22*	*-1.06*	*-1.13*	*-0.99*	*-0.97*	*-0.78*	*-0.47*	*-0.86*	*-0.81*	*-0.74*
ΔFIN	*3 High*	0.017 ***	0.015 ***	0.012 ***	0.011 ***	0.01 ***	0.01 ***	0.009 ***	0.008 ***	0.007 ***	0.005 ***	0.005 ***	0.005 ***
		5.46	*5.03*	*4.38*	*3.82*	*3.76*	*4.15*	*3.84*	*3.96*	*4.27*	*4.00*	*3.56*	*3.88*

PANEL B: Forecast errors and total accruals

$$Ferror_{s,it+1} = \beta_0 + \beta_1 TACC_{it} + \varepsilon_{it+1}$$

Month	m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept	-0.017 ***	-0.015 ***	-0.013 ***	-0.012 ***	-0.01 ***	-0.009 ***	-0.008 ***	-0.007 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***
TACC	0.002	0	0	0	0	0	0	0	0.001	0	0	0
	0.94	0.39	-0.05	-0.1	-0.22	0.15	-0.07	0.08	0.67	0.15	0.15	0.2

The number of firm-year observations ranges from 45,145 to 48,142 across twelwe months from 1976 to 2013 for which consensus analsyt earning forecasts and actual earnings are available on the IBES summary statistics file. Standard errors clustered by firm and year using the Petersen (2009) approach. Variable definitions are provided in Table A of the Appendix. *** denotes statistical significance at the 1% level.

[a] *indicates the persistence order of accrual componenst obtained from the corresponding multivariate earnings persistence regression from Table 3.*

Table 5
Forecasts optimism and accrual persistence

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta COL_{it} + \beta_2 \Delta COA_{it} + \beta_3 \Delta NCOL_{it} + \beta_4 \Delta NCOA_{it} + \varepsilon_{it+1}$$

	Persistence Order [(a)]	m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept		-0.016 ***	-0.014 ***	-0.012 ***	-0.011 ***	-0.010 ***	-0.008 ***	-0.008 ***	-0.007 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***
(-)ΔCOL	1 Low	-0.062 ***	-0.057 ***	-0.046 ***	-0.038 ***	-0.035 ***	-0.033 ***	-0.034 ***	-0.028 ***	-0.018 ***	-0.020 ***	-0.019 ***	-0.018 ***
		-10.42	*-9.63*	*-5.09*	*-5.27*	*-6.25*	*-6.54*	*-6.34*	*-4.89*	*-4.14*	*-3.5*	*-2.83**	*-3.46*
ΔCOA	2	-0.037 ***	-0.034 ***	-0.031 ***	-0.025 ***	-0.024 ***	-0.025 ***	-0.022 ***	-0.018 ***	-0.014 ***	-0.012 ***	-0.010 ***	-0.009 ***
		-7.26	*-7.44*	*-5.47*	*-5.47*	*-5.56*	*-7.85*	*-7.37*	*-6.39*	*-6.04*	*-4.87*	*-3.58*	*-4.03*
(-)ΔNCOL	3	-0.032 ***	-0.038 ***	-0.029 ***	-0.044 **	-0.049 **	-0.025 ***	-0.056	-0.053	-0.016 ***	-0.045	-0.044	-0.039
		-4.02	-3.21	-3.78	-2.27	-1.96	-3.94	-1.59	-1.57	-2.97	-1.32	-1.28	-1.19
ΔNCOA	4 High	-0.002	-0.003	-0.005	-0.006	-0.006	-0.002	-0.004	-0.003	-0.00	-0.003	-0.002	-0.002
		-0.71	*-1.22*	*-1.32*	*-1.03*	*-0.99*	*-0.69*	*-0.79*	*-0.66*	*-0.11*	*-0.69*	*-0.73*	*-0.62*

The number of firm-year observations ranges from 45,145 to 48,142 across twelwe months from 1976 to 2013 for which consensus analsyt earning forecasts and actual earnings are available on the IBES summary statistics file. Standard errors clustered by firm and year using the Petersen (2009) approach. Variable [(a)] *indicates the persistence order of accrual componenst obtained from the corresponding multivariate earnings persistence regression from Table 3.*

Table 6

Forecast errors, accrual components and controls

PANEL A: m1 (month one) OLS regressions of forecast errors on individual accrual components and controls

$$Ferror_{1,it+1} = \beta_0 + \sum_{k=1}^{n} \beta_k ACC_{it} + \sum_{j=1}^{m} \beta_{k+j} X_{it} + \sum_{l=1}^{z} \delta_l Ind_t + \varepsilon_{it+1}$$

n=7 (extended accrual components)
m=7 (control variables)
z= 48 (industries, categorised by Fama & French, 1997)

		No	With Controls (each regression includes only one control variable)							All
		Controls	*beta*	*B/P*	*Size*	*leverage*	*Loss_ D*	*E/P*	*Past_Ret*	Controls
	Persistence Order [(a)]									
(-)ΔCOL	*1 Low*	-0.062 ***	-0.060 ***	-0.047 ***	-0.048 ***	-0.060 ***	-0.064 ***	-0.057 ***	-0.026 ***	-0.025 ***
		-10.42	*-12.63*	*-11.10*	*-11.28*	*-12.31*	*-14.90*	*-9.97*	*-4.75*	*-4.55*
ΔCOA	*2*	-0.037 ***	-0.027 ***	-0.045 ***	-0.016 ***	-0.040 ***	-0.046 ***	-0.044 ***	-0.033 ***	-0.060 ***
		-7.26	*-7.86*	*-14.38*	*-5.22*	*-10.93*	*-15.71*	*-8.21*	*-5.95*	*-11.54*
(-)ΔNCOL	*3*	-0.032 ***	-0.024 ***	-0.037 ***	-0.014 ***	-0.028 ***	-0.019 ***	-0.017 ***	0.005	-0.027 ***
		-4.02	*-3.39*	*-4.74*	*-2.16*	*-3.78*	*-3.38**	*-2.87*	*1.65*	*-3.12*
ΔNCOA	*4*	-0.002	-0.001	-0.012 ***	-0.005 **	-0.010 ***	-0.004	0.001	-0.031 ***	-0.017 ***
		-0.71	*-0.67*	*-6.28*	*-2.16*	*-5.70*	*-2.65*	*0.41*	*-3.51*	*-4.96*
ΔLTI	*5*	0.006	0.008	0	0.002	-0.003	0.008	0.011 **	0.011 ***	-0.007
		1.33	*1.68*	*0.09*	*0.59*	*-0.48*	*1.26*	*1.92*	*3.96*	*-0.080*
(-)ΔFINL	*6*	0.025 ***	0.030 ***	0.019 ***	0.027 ***	0.010 ***	0.020 ***	0.027 ***	0.003	-0.012 ***
		5.95	*6.68*	*9.08*	*12.83*	*4.87*	*9.92*	*6.16*	*0.47*	*-3.55*
ΔSTI	*7 High*	0.010 ***	0.011 ***	0.002	0.007 ***	0.006 ***	0.013 ***	0.012 ***	0.029 ***	0.003
		4.23	*5.01*	*1.46*	*3.84*	*2.74*	*6.24*	*3.81*	*5.72*	*0.084*
Intercept			-0.003 ***	-0.029 ***	0.006 ***	-0.016 ***	-0.058 ***	0.162 ***	0.023 ***	all
			-5.09	*-44.64*	*49.25*	*-34.61*	*-92.88*	*15.58*	*13.78*	*significant*
R^2		2.5%	2.8%	6.7%	7.6%	5.3%	17.5%	15.9%	6.8%	34.7%
Observations		48,159	45,729	46,795	48,015	41,124	48,070	47,589	44,853	35,307

The sample period is 1976 and 2013 for which consensus analysts earning forecasts and actual earnings are available on the IBES summary statistics file. Standard errors clustered by firm and year using the Petersen (2009) approach, and industry fixed effects are controlled according to Fama & French (1997) 48 industry classifications. Variable definitions are provide in Table A of the Appendix. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

[(a)] *indicates the persistence order of a particular accrual component obtained from the accrual persistence tests reported in Table 3.*

Table 7
Forecast errors, accrual components and conservatism

$$Ferror_{1,it+1} = \beta_0 + \beta_1 D_i + \sum_{k=1}^{3} \delta_k QACC_{it} + \sum_{j=1}^{3} \gamma_k D_i * QACC_{it} + \varepsilon_{it+1}$$

		Hidden_Reserves			*C_Score*		
		m1	**m2**	**m3**	**m1**	**m2**	**m3**
Intercept		-0.018 ***	-0.016 ***	-0.014 ***	-0.018 ***	-0.016 ***	-0.014 ***
D		0	0	0.001	0	0	0.001
	Persistence	Low conservatism			Low conservatism		
QΔWC	1 Low	-0.022 **	-0.022 **	-0.020 **	-0.031 ***	-0.032 ***	-0.026 ***
QΔNCO	2	0.011 **	0.008	0.006	0.004	0.003	-0.003
QΔFIN	3 High	0.040 ***	0.035 ***	0.031 ***	0.016 ***	0.014 ***	0.014 ***
		Incremental conservatism			Incremental conservatism		
*D*QΔWC*	1 Low	-0.021 **	-0.019	-0.019	0.007	0.008	-0.003
*D*QΔNCO*	2	-0.023 ***	-0.020 ***	-0.021 ***	0	-0.004	0.006
*D*QΔFIN*	3 High	-0.029 ***	-0.027 ***	-0.026 ***	0.020 ***	0.013	0.011
Sum of coefficients (δ+ ϒ)		High conservatism			High conservatism		
*QΔWC+D*QΔWC*		-0.043 ***	-0.041 ***	-0.039 ***	-0.024 ***	-0.024 ***	-0.028 ***
*QΔNCO+D*QΔNCO*		-0.012	0.012	0.016	0.003	0	0.004
*QΔFIN+D*QΔFIN*		0.011 ***	0.009 ***	0.005	0.036 ***	0.028 ***	0.024 ***

The samples consist of 14,207 (14,707) firm-year observations for *Hidden_reserves (C_Score)* between 1976 and 2013. *QΔWC, QΔNCO,* and *QΔFIN* are quintile rankings for *ΔWC, ΔNCO* and *ΔFIN* based on their respective magnitudes in year *t*. *D* is an indicator variable which assignes 0 (1) for the lowest (highest) conservatism quintile. Conservatism quintiles are based on the magnitudes of *Hidden_reserves (C_Score)* for the first three months of year t before the announcement of year *t* quarterly earnings. Standard errors clustered by firm and year using the Petersen (2009) approach. All variables are defined in Table A in the Appendix. Regressions are run for the first three months before the announcement of quarterly earnings. *** and ** denote statistical significance at the 1% and 5% levels, respectively.

[a] indicates the persistence order of accrual componenst obtained from the corresponding multivariate earnings persistence regression from Table 3.

Table 8
Forecast errors, accruals and cash flows

PANEL A: Operating and financial accruals and cash flow components of earnings

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta OPAC_{it} + \beta_2 \Delta FIN_{it} + \beta_3 CF_{it} + \varepsilon_{it+1}$$

		m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept		-0.017 ***	-0.014 ***	-0.12 ***	-0.011 ***	-0.009 ***	-0.008 ***	-0.007 ***	-0.006 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***
	Persistence Order [(a)]												
ΔOPAC	*1 Low*	-0.010 ***	-0.012 ***	-0.012 ***	-0.011 ***	-0.011 ***	-0.008 ***	-0.009 **	-0.007 *	-0.004 **	-0.005	-0.004	-0.004
		-3.66	*-4.20*	*-4.21*	*-2.82*	*-2.70*	*-3.29*	*-2.18*	*-1.78*	*-2.42*	*-1.53*	*-1.36*	*-1.30*
ΔFIN	*2*	0.009 ***	0.008 ***	0.006 **	0.006 **	0.005 **	0.005 **	0.005 **	0.004 *	0.004 **	0.003 **	0.003 **	0.002 *
		3.39	*2.99*	*2.43*	*2.21*	*2.04*	*2.20*	*1.90*	*1.85*	*2.20*	*2.05*	*2.13*	*1.91*
CF	*3 High*	0.042 ***	0.035 ***	0.030 ***	0.027 ***	0.025 ***	0.021 ***	0.020 ***	0.016 ***	0.013 ***	0.012 ***	0.011 ***	0.010 ***
		8.58	*8.57*	*7.10*	*7.70*	*7.77*	*6.85*	*7.48*	*6.99*	*6.39*	*6.63*	*6.58*	*6.29*

PANEL B: Financial accruals and cash flow components

$$Ferror_{s,it+1} = \beta_0 + \beta_1 \Delta LTI_{it} + \beta_2 \Delta FINL_{it} + \beta_3 \Delta STI_{it} + \beta_4 CF_{it} + \varepsilon_{it+1}$$

		m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept		-0.015 ***	-0.014 ***	-0.12 ***	-0.011 ***	-0.01 ***	-0.008 ***	-0.007 ***	-0.006 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***
	Persistence Order [(a)]												
ΔLTI	*1 Low*	0.006	0.007	0.006	0.007	0.005	0.093	0.004	0.003	0.004	0.004	0.002	0.002
		1.28	*1.50*	*1.12*	*1.37*	*1.04*	*0.77*	*0.99*	*0.68*	*1.25*	*1.25*	*0.62*	*0.85*
ΔFINL	*2*	*0.016* ***	*0.016* ***	*0.014* ***	*0.013* ***	*0.013* ***	*0.011* ***	*0.011* ***	*0.008* ***	*0.013* **	*0.012* *	*0.012*	*0.005* ***
		5.02	*5.26*	*4.38*	*4.35*	*4.86*	*5.28*	*4.47*	*4.25*	*1.93*	*1.67*	*1.57*	*2.92*
ΔSTI	*3*	0.010 ***	0.008 ***	0.007 ***	0.006 **	0.006	0.006 **	0.005 ***	0.006 ***	0.007 ***	0.007 **	0.007 **	0.003 **
		3.72	*3.11*	*2.22*	*1.68*	*1.85*	*1.96*	*2.07*	*2.54*	*2.90*	*2.19*	*2.37*	*2.36*
CF	*4 High*	0.041 ***	0.035 ***	0.030 ***	0.029 ***	0.024 ***	0.020 ***	0.020 ***	0.016 ***	0.012 ***	0.011 ***	0.010 ***	0.010 ***
		8.71	*8.65*	*7.15*	*7.67*	*7.79*	*6.84*	*7.21*	*6.82*	*5.60*	*6.68*	*6.54*	*5.92*

The number of firm-year observations ranges from 41,515 to 39,898 across twelwe months from 1976 to 2013 for which consensus analsyt earning forecasts and actual earnings are available on the IBES summary statistics file. F-tests (untabulated) reveal that the coefficients are statistically different from each other. Standard errors clustered by firm and year using the Petersen (2009) approach (see section 6 for the definition of variables). ***, **, and * denote statistical significance at the 1%, 5% and %10 levels, respectively.

[(a)] *indicates the persistence order of accrual componenst obtained from the corresponding multivariate earnings persistence regression from Table 3.*

Table 9
Future stock returns and accruals

PANEL A: Future stock returns and total accruals

$$Ret_{it+1} = \beta_0 + \beta_1 TACC_{it} + \sum_{j=1}^{m} \beta_{j+1} X_{it} + \varepsilon_{it+1}$$

m=5 (control variables)

	Intercept	*TACC*	*Beta*	*B/P*	*E/P*	*Size* [a]	*Past_Return*	R^2
mean coef.	-0.074 ***	**-0.173** ***	0.035 ***	0.037 *	0.67 ***	-0.001	-0.099 ***	0.06
	-2.05	***-6.38***	*2.15*	*1.78*	*10.52*	*-0.22*	*-5.13*	

[a] *Since the stock returns are already adjusted by size, the coefficient is not expected to be significant*

PANEL B: Future stock returns and accrual components

$$Ret_{it+1} = \beta_0 + \sum_{k=1}^{n} \beta_k ACC_{it} + \sum_{j=1}^{m} \beta_{k+j} X_{it} + \varepsilon_{it+1}$$

n=7 (extended accrual components)
m=5 (control variables)

	Intercept		*(-)ΔCOL*	*ΔCOA*	*(-)ΔNCOL*	*ΔNCOA*	*ΔLTI*	*(-)ΔFINL*	*ΔSTI*	R^2
mean coef.	-0.042	*Controls*	-0.313 ***	-0.278 ***	-0.182 ***	-0.194 ***	-0.126 ***	-0.042	-0.098 ***	0.07
	-1.08	*yes*	*-7.22*	*-6.64*	*-3.43*	*-6.06*	*-4.41*	*-1.26*	*-6.77*	
Persistence Order [a]			*1*	*2*	*3*	*4*	*5*	*6*	*7*	

The sample consists of 100,787 firm-year observations for 1976-2013. Accrual variables are winsorised to +1 and -1, other variables are winsorised to 1% and 99%. X denotes controls (size, market Beta, B/P, E/P and past returns). See Table A in the Appendix for the definitions of other variables. Standard errors clustered by firm and year using the Petersen (2009) approach. *** denotes statistical significance at the 1% level.

[a] *indicates the persistence order of a particular accrual component obtained from the accrual persistence tests reported in Table 3.*

Table 10
Forecast errors and accruals portfolios

PANEL A: Forecast errors, working capital, non-current operating and financial accruals portfolios

$$Ferror_{s,it+1} = \beta_0 + \beta_1 dec\Delta WC_{it} + \beta_2 dec\Delta NCO_{it} + \beta_3 dec\Delta FIN_{it} + \varepsilon_{it+1}$$

	m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept	-0.019 ***	-0.018 ***	-0.016 ***	-0.015 ***	-0.013 ***	-0.011 ***	-0.01 ***	-0.009 ***	-0.008 ***	-0.006 ***	-0.005 ***	-0.005 ***
decΔWC	-0.006 ***	-0.006 ***	-0.004 ***	-0.003 ***	-0.003 ***	-0.003 ***	-0.003 ***	-0.002 ***	-0.001 ***	-0.001	-0.001	-0.001
	-6.12	-6.52	-3.44	-2.90	-3.13	-5.02	-4.83	-3.7	-2.54	-1.89	-1.44	-1.77
decΔNCO	0.003 ***	0.002 ***	0.001	0.001	0	0.002	0.001	0.001	0.001	0	0	0
	3.06	2.50	0.97	0.72	0.56	1.62	1.1	1.18	1.81	0.95	1.17	1.15
decΔFIN	0.010 ***	0.009 ***	0.009 ***	0.008 ***	0.008 ***	0.006 ***	0.006 ***	0.005 ***	0.004 ***	0.004 ***	0.004 ***	0.003 ***
	7.53	7.54	6.79	7.51	7.10	6.35	6.61	7.06	6.11	6.13	5.92	5.18

PANEL A: Forecast errors and accrual components portfolios

$$Ferror_{s,it+1} = \beta_0 + \beta_1 dec\Delta COL_{it} + \beta_2 dec\Delta COA_{it} + \beta_3 dec\Delta NCOL_{it} + \beta_4 dec\Delta NCOA_{it} + \beta_5 dec\Delta LTI_{it} + \beta_6 dec\Delta FINL_{it} + \beta_7 dec\Delta STI_{it} + \varepsilon_{it+1}$$

	m1	m2	m3	m4	m5	m6	m7	m8	m9	m10	m11	m12
Intercept	-0.009 ***	-0.008 ***	-0.008 ***	-0.009 ***	-0.008 ***	-0.006 ***	-0.007 ***	-0.006 ***	-0.005 ***	-0.004 ***	-0.004 ***	-0.003 ***
(-)decΔCOL	-0.012 ***	-0.012 ***	-0.008 ***	-0.006 ***	-0.006 ***	-0.006 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.002 ***	-0.002 ***	-0.002 ***
	-9.69	-9.45	-4.04	-3.04	-2.93	-5.48	-5.35	-5.03	-3.41	-3.93	-3.91	-3.75
decΔCOA	-0.006 ***	-0.006 ***	-0.004 ***	-0.003	-0.003	-0.004 ***	-0.003 ***	0.0018 **	-0.002 ***	-0	-0	-0
	-5.48	-5.76	-1.97	-1.2	-1.15	-4.76	-2.87	-2.58	-2.2	-0.55	-0.46	-0.19
(-)decΔNCOL	-0.009 ***	-0.008 ***	-0.008 ***	-0.007 ***	-0.007 ***	-0.005 ***	-0.005 ***	-0.004 ***	-0.003 ***	-0.003 ***	-0.003 ***	-0.003 ***
	-6.72	-6.38	-5.74	-5.01	-4.98	-5.42	-4.41	-4.6	-4.41	-3.83	-3.75	-3.38
decΔNCOA	-0	-0	-0.002	-0.001	-0.001	-0	0	0	0	0	0	0
	-0.32	-0.6	-0.83	-0.48	-0.52	0.52	0.52	0.61	1.09	0.45	0.23	0.56
decΔLTI	0.001	0.002 **	0.002 **	0.002	0.002	0	0	0	0	0	0	0
	1.59	1.98	1.90	1.92	1.77	0.92	0.98	0.92	-0.02	0.55	0.26	0.15
(-)decΔFINL	0.009 ***	0.008 ***	0.007 ***	0.007 ***	0.007 ***	0.006 ***	0.006 ***	0.005 ***	0.004 ***	0.004 ***	0.003 ***	0.003 ***
	3.87	3.65	3.63	4.74	4.17	3.73	4.29	4.53	3.37	3.38	2.92	2.72
decΔSTI	0.005 ***	0.004 ***	0.004 ***	0.004 ***	0.004 ***	0.003 ***	0.003 ***	0.003 ***	0.002 ***	0.002 ***	0.002 ***	0.002 ***
	5.11	5.07	5.62	5.64	5.24	3.73	5.14	6.3	5.14	4.64	4.5	4.13

The number of firm-year observations ranges from 45,145 to 48,142 across twelwe months from 1976 to 2013 for which consensus analsyt earning forecasts and actual earnings are available on the IBES summary statistics file. Standard errors clustered by firm and year using the Petersen (2009) approach (see section 6 for the definition of variables). Decile accrual portfolios are formed based on the magnitude of a particular accrual component in year *t* , and scaled to a (0,1) range. ***, and ** denote statistical significance at the 1% and 5% levels, respectively.