MANDATORY EARNINGS DISAGGREGATION

AND THE PERSISTENCE AND PRICING OF EARNINGS COMPONENTS

Abstract

We investigate whether the special item anomaly in the U.S. exists in an environment where the separation of non-recurring items from earnings is mandated. We use South African data, as the separate disclosure of specific non-recurring items has been mandatory since 2000. Our results show that, other than the cash flow component of earnings, none of the other earnings components reflects significant mispricing. When additional explanatory variables are included in the analyses, the mispricing of the cash flow component disappears. This evidence suggests that the mandatory disaggregation of non-recurring earnings components from earnings is useful to investors.

1 Introduction

Sloan (1996) started a line of research that shows that investors tend to overrate the persistence of the accrual component of earnings relative to the cash flow component, resulting in a negative association between current period accruals and future share returns. This finding extends to special items – a type of accruals that are transitory or non-recurring – even though the implications of these items for future earnings should be relatively clear to investors (Atwood and Xie, 2010; Dechow and Ge, 2006). However, in the U.S., the identification and reporting of special items are largely discretionary (Burgstahler *et al.*, 2002; Frankel, 2009), making them susceptible to earnings management practices (McVay, 2006). As a result, it is not clear if the mispricing of special items is just a reflection of investors' confusion about the actual persistence of the reported numbers.

In this study, we focus on a setting where the disclosure of certain transitory/non-recurring items is *mandatory* rather than voluntary. Although research shows that the non-recurring items that are disaggregated from earnings on a *voluntary* basis are mispriced (Doyle *et al.*, 2003), we are not aware of any studies that examine whether non-recurring items are mispriced when regulatory bodies make it *mandatory* for these items to be disaggregated from earnings. This is largely because the U.S. and other large industrial nations do not require such information. By focusing on a setting where firms are required to disaggregate most non-recurring items from other earnings components, we can eliminate earnings management as a possible source of mispricing. As such, we can focus directly on whether the disaggregation of earnings provides useful information to investors.

Specifically, in South African, firms listed on the Johannesburg Securities Exchange (JSE) are required to disclose in their financial statements their "headline earnings" per share (HEPS), in addition to the earnings per share (EPS) measures required by International Accounting Standard (IAS) 33, *Earnings Per Share*. Headline earnings decomposes the

profit reported in terms of the International Financial Reporting Standards (IFRSs) between remeasurements that are closely related to operating activities and the platform used to generate them (i.e., the capital base) (SAICA, 2007). Effectively, headline earnings exclude many transitory/non-recurring items.[1] Additionally, a reconciliation between IFRS earnings and headline earnings is required in the financial statements.

We begin our analysis by investigating the persistence properties of earnings components in South Africa. We have no prior reasons to expect that the persistence of earnings components in South Africa would be fundamentally different compared to the findings reported in studies using data from the U.S. We find that, as expected, headline earnings (the recurring part of earnings) has higher persistence than headline earnings exclusions (the non-recurring part of earnings). Similar to the findings of Dechow and Ge (2006), the difference can be attributed largely to the non-recurring earnings component (headline earnings exclusions in our case).

Having shown that the persistence parameters of earnings components in South Africa behave similarly to those reported in U.S. studies, we turn our attention to the pricing of earnings components in South Africa. We expect to find different results compared to the mispricing of special items in the U.S., mainly because headline earnings disclosure is mandatory for all firms and only specifically identified items are allowed as exclusions. Hence, headline earnings are clearly defined, headline earnings exclusions are less affected by managers' discretion and earnings management practices compared to special items in the U.S., and the exclusions from headline earnings are clearly identified in the financial statements. These improvements suggest that the mandatory disaggregation of earnings exclusions should assist investors to price the non-recurring items more accurately.

[1] Items that are excluded from headline earnings include impairment (and reversals) on goodwill, property, plant and equipment (PPE) and intangible assets, bargain purchase gains in a business combination, the gain/loss on the disposal of discontinued operations, gains/losses on disposal of items of PPE, intangible assets and investments, the reclassification of foreign currency translation differences and reclassification of gains or losses on available-for-sale financial assets originally recognised in equity, and fair value adjustments to investment property. Appendices 1 and 2 contain extracts from the relevant regulation, while Appendix 3 contains an example of the required disclosure.

Our results indicate that other than the cash flow component of earnings, none of the other earnings components (accruals and headline earnings exclusions) reflects significant mispricing. However, when additional explanatory variables are included in the analysis, the mispricing of the cash flow component disappears. Overall, our evidence suggests that when the disclosure of non-recurring items is mandated, investors are able to price earnings components in a manner that is consistent with the actual levels of persistence of these components. The findings are robust to alternative research design choices.

Our research makes three contributions. First, we provide evidence that may be useful to the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) as they deliberate on ways to improve financial statement presentation by means of disaggregated disclosure. Our results suggest a disaggregated earnings figure that is free of managerial discretion could lead to more accurate pricing of the accrual components. Second, we contribute to the special item (accrual) anomaly literature by providing evidence on whether components of earnings are mispriced when a particular form of disaggregation disclosure is required. Third, drawing on Kraft et al. (2007), we show that the asymptotic equivalence of the Mishkin test and ordinary least squares extends to smaller sample settings.

The remainder of this paper is organised as follows. Section 2 provides background to headline earnings. Section 3 reviews the prior literature, and develops the hypotheses. Section 4 discusses the sample. Section 5 details the research design. Section 6 discusses descriptive statistics. Section 7 presents the main results. Section 8 contains additional analyses, and Section 9 concludes the study.

2 Background to headline earnings

The first definition of headline earnings was developed in the United Kingdom in 1993 by the Institute of Investment Management and Research (IIMR), now known as the Chartered Financial Analyst Society of the United Kingdom (CFA UK), at the request of the *Financial Times*, which wanted consistent Price-to-Earnings Ratios (PERs) in the wake of the new United Kingdom standard, FRS 3. The issue was that the earnings figure in terms of FRS 3 contained several items of a "capital" nature, which do not contribute to the annual earnings power of a firm (CFA UK, 2007). Since 2 October 2000, the JSE requires headline earnings to be calculated and published in annual financial statements in terms of the original UK definition and subsequently in terms of circulars issued by the South African Institute of Chartered Accountants (SAICA). Internationally, no other stock exchange has made the disclosure of HEPS mandatory (O'Flaherty, 2006). SAICA has issued Circular 7/2002, Circular 8/2007 and Circular 3/2009 mainly to update the original UK definition of headline earnings for developments in IFRS.

3 Prior research and hypotheses

3.1 Earnings persistence

We begin our discussion by focussing on earnings persistence. Earnings persistence refers to the likelihood that a firm's earnings level will recur in future periods (Nichols and Wahlen, 2004). Headline earnings closely resembles core earnings since it is often used as a summary measure of performance (Brooking, 2006). Specifically, items excluded from headline earnings do not relate to the operating activities of an entity because these items are associated with the platform (capital base) used to generate trading income (SAICA, 2009). Therefore, these exclusions are expected to occur less frequently than earnings generated through operating activities. For this reason, HEPS may be a more reliable estimator for

price/earnings ratios than basic EPS. Since headline earnings exclusions occur less frequently than other earnings components, headline earnings exclusions should exhibit lower persistence than headline earnings, leading to the following hypothesis:

H1a: Headline earnings is more persistent than headline earnings exclusions.

Sloan (1996) distinguishes between the persistence of the accrual component and that of the cash flow component of earnings. He indicates that the cash flow component exhibits higher persistence than the accrual component of earnings, and attributes this finding to the subjectivity involved in estimating accruals. Thus, a second hypothesis is:

H1b: The cash flow component of earnings is more persistent than the accrual component of earnings.

H1b is particularly critical with regard to the external validity of our study. It is important to document that the persistence of cash flows and accruals in South Africa is similar to the U.S. where most prior research has been based. As South Africa is a G-20 country with the largest stock exchange in Africa (i.e., the JSE), our priors are that the greater persistence of cash flow over accruals found in the U.S. should hold in South Africa.

Various researchers have attempted to provide insight into the particular properties of earnings and its components that affect persistence. Dechow and Dichev (2002) show that persistence is positively related to accrual quality, while Richardson *et al.* (2005) demonstrate that less reliable accruals reduce earnings persistence. Such accruals require significant management estimation in many instances, resulting in a potentially large diminution in reliability through measurement error (Schipper and Vincent, 2003). In addition, Dichev and Tang (2008) conclude that earnings persistence is negatively influenced by the nonsychronicity of matching of income and expenses. Dechow and Ge (2006) deduce that the nonsychronicity arises when firms recognise large negative special items, because the

accounting rules require recognition of unrealised losses. These one-time losses reduce earnings persistence (Basu, 1997; Dechow and Ge, 2006).

Likewise, many headline earnings exclusions are the result of the recognition of current value adjustments in earnings before the cash flow for these adjustments is complete. For example, the recognition of impairment losses accelerates the recognition of the reduction in future cash flows of assets, thereby inducing temporary shocks in earnings that reduce persistence (Ramakrishnan and Thomas, 1998). Examples of headline earnings exclusions that create nonsychronicity include impairment losses, reversals of impairment losses, and fair value adjustments on investment property. As a result, the items excluded from headline earnings are likely to be less persistent than items included in headline earnings, leading to the following hypothesis:

H1c: *The accrual component included in headline earnings is more persistent than the accrual component excluded from headline earnings.*

Some headline earnings exclusions also affect cash flows, e.g., gains or losses on the disposal of fixed assets. Although the cash flow component of these headline earnings exclusions is not subject to the same degree of measurement difficulty as accruals, it is still expected to occur less frequently than "core" cash flows:

H1d: *The cash flow component included in headline earnings is more persistent than the cash flow component excluded from headline earnings.*

3.2 Pricing of earnings components

The mispricing of special items in the U.S. (Burgstahler *et al.*, 2002; Dechow and Ge, 2006) may lead one to predict that headline earnings exclusions may be mispriced similarly in South Africa. Although special items in the U.S. and headline earnings exclusions in South Africa are similar in nature, in that both attempt to identify one-time items, they differ

in an important way. The reporting of special items in the U.S. is largely voluntary, whereas the disclosure of headline earnings is mandatory.

This difference in level of discretion is important because studies find that managers use their discretion when reporting special items or items excluded from *pro forma* earnings. For example, Kolev et al. (2008) find that while SEC scrutiny of *pro forma* earnings has resulted in improved quality of certain *pro forma* earnings exclusions, the quality of special items has deteriorated. They interpret this as evidence that managers have adapted to alternative reporting strategies since the SEC's interventions, by shifting more recurring expenses into special items. By contrast, the notion of special items is not allowed by IFRS.[2] Hence, it will be much harder for South African firms to identify items as non-recurring in their financial statements, other than by using headline earnings exclusions, which are strictly defined. Further, the promulgated headline earnings definition should assist auditors in identifying headline earnings exclusions of South African firms more accurately.[3]

In South Africa, only the earnings component excluded from headline earnings is displayed separately. However, the remaining components (accruals and cash flows included in headline earnings) can easily be determined from other disclosures in the financial statements. Therefore, the removal of remeasurements that do not relate to the operating activities of the entity should improve investors' ability to assess the pricing consequences of the remaining components. As a result, we predict that it will be easier for investors to price non-recurring items in South Africa. We predict that mispricing of earnings components will not be observed in South Africa:

H2: The earnings expectations embedded in share prices fully reflect the differential persistence of the components of earnings.

[2] In 2002, the IASB eliminated the concept of "extraordinary items" from its standards. Hence, no items may be presented as arising from outside the entity's ordinary activities.
[3] There is also some evidence to suggest that *Compustat* is inconsistent in its identification of special items (Burgstahler *et al.,* 2002; Frankel, 2009). By contrast, headline earnings is clearly defined.

4 Sample selection

Our main sample includes firms listed on the main board of the JSE with a few exceptions. Firms in the financial services industry are excluded because their accruals are difficult to define and interpret (Ahmed *et al*., 2006; Atwood and Xie, 2010) and the distinction between their operating and investing activities is also not entirely clear (Dechow and Ge, 2006; Richardson *et al*., 2005).[4] Foreign firm-years are also excluded.

All the necessary data are taken from McGregor BFA, which is the largest provider of stock market data, fundamental research data, and news to the financial sector and the corporate market in South Africa.

The sample period starts with 2001 because the disclosure of headline earnings was incorporated in the JSE listing requirements from 2 October 2000 onwards. The sample period ends in 2008. As the regression models require data for period $t-1$ as well as for period $t+1$, we also use data for 2000 and 2009. We remove firm-year observations with missing data on the McGregor BFA.

Table 1 details the sample composition. The sample includes 331 firms and a total of 1,618 firm-year observations. The majority of the firms are in the industrial sector (32.6%), followed by firms in the consumer services sector (22.1%), and basic materials sector (18.4%).

Insert Table 1

[4] As a sensitivity check, we repeat our analysis for a sample including financial firms. Our inferences are qualitatively similar.

5 Research design

5.1 Defining earnings components

We commence with the basic premise that earnings (*EARN*) consists of an accrual (*ACCR*) and a cash flow (*CF*) component:

$$EARN = CF + ACCR \quad (1)$$

In terms of the headline earnings framework, earnings (*EARN*) consists of earnings included in headline earnings (*INHE*) and earnings excluded from headline earnings (*EXHE*):

$$EARN = INHE + EXHE \quad (2)$$

Since earnings consists of an accrual and a cash flow component, and as earnings is deconstructed into *INHE* and *EXHE*, we can re-express eq. (2) as:

$$EARN = INCF + EXCF + INAC + EXAC \quad (3)$$

where *INCF* is the cash flows included in headline earnings, *EXCF* is the cash flows excluded from headline earnings, *INAC* is the accruals included in headline earnings, and *EXAC* is the accruals excluded from headline earnings. Following Hribar and Collins (2002), we use the direct method (i.e., taking the information from the cash flow statement) to calculate accruals.

We start with the definition of *operating* accruals used extensively by prior researchers (Atwood and Xie, 2010; Barone and Magilke, 2009; Collins and Hribar, 2000; Dechow and Ge, 2006; Drake *et al.*, 2009):

$$ACCR = EARN - CF \quad (4)$$

where *EARN* is the profit for the period (McGregor BFA item #1090305 x #01060206 x #2020072)[5] and *CF* is the cash flows from *operating* activities before dividends (#01030714).

Cash flows from *operating* activities do not include cash flows relating to headline earnings exclusions resulting from the disposal of assets. These cash flows are included in

[5] Profit for the period is calculated by multiplying the bottom line earnings per shares (EPSBL) by the weighted average number of ordinary shares outstanding (WANOS) during the period and then adding back preference share dividends. Where EPSBL or WANOS for a firm is not in the McGregor BFA database, we take these values from the actual financial statements of the companies, if they are available in the McGregor BFA library.

cash flows from *investing* activities in the cash flow statement. The *operating* accrual definition assumes that all headline earnings exclusions are accruals, that is $EXHE = EXAC$, so $EXCF = 0$. Consequently, with this assumption, we can decompose *EARN* as follows:

$$EARN = INCF + INAC + EXAC \quad (5)$$

where *EXAC* (= *EXHE*) is the accruals excluded from headline earnings, i.e., basic earnings less headline earnings (*EARN* - *INHE*); *INHE* is headline earnings (#02020086 x #01060206 + #02020072)[6]; *INAC* is accruals included in headline earnings, i.e., *ACCR* – *EXAC*; and *INCF* is cash flows from operating activities before dividends (#01030714).

Richardson *et al.* (2005: 439) argue that the definition of *operating* accruals ignores non-current accruals such as property, plant and equipment, resulting in "noisy measures of both accruals and cash flows". In the spirit of Hribar and Collins (2002), Dechow and Ge (2006) calculate *total* accruals from the cash flow statement as the difference between earnings and free cash flows. They argue that free cash flows match the flows in earnings better "because earnings includes capital charges such as depreciation and amortization charges that are ignored in cash flows from operations" (Dechow and Ge, 2006: 260). To address this concern, we follow Dechow and Ge (2006) by replacing operating cash flows in eq. (4) with free cash flow, where free cash flow consists of operating cash flows plus investing cash flows.

The *total* accrual definition allocates earnings from disposal of assets to its cash flow and accrual components. In order to divide the accrual component between those accruals included and excluded from headline earnings, an assumption is needed about the attributes of headline earnings exclusions. Atwood and Xie (2010) and Dechow and Ge (2006) assume that all special items affect only accruals. This assumption is violated for some special items,

[6] Headline earnings is calculated by multiplying HEPS by the weighted average number of shares outstanding (WANOS) during the year and then adding back preference share dividends. Where HEPS or WANOS for a firm is not in the McGregor BFA database, we take these values from the actual financial statements of the companies, if they are available in the McGregor BFA library.

resulting in measurement error in the variables.[7] The only headline earnings exclusions that contain both an accrual component and a cash flow component are gains and losses on the disposal of assets and the (very rare cases where there is a) bargain purchase gain in a business combination. We can decompose gains or losses from the disposal of assets between the accrual and cash flow components because McGregor BFA identifies proceeds from the disposal of fixed assets and investments separately on the cash flow statement. For *total* accruals, we use the following decomposition:

$$EARN = INCF + EXCF + INAC + EXAC \quad (3)$$

where *EXCF* is the free cash flow excluded from headline earnings, i.e., proceeds on disposal of fixed assets (#01030724) plus the proceeds on disposal of investments (#01030725), and free cash flow is cash flows from operating activities (#01030714) before dividends plus cash flows from investing activities (-#01030718 + #01030723); *INCF* is the free cash flow included in headline earnings, i.e., *CF – EXCF*; *INAC* is the accruals included in headline earnings, i.e., *INHE – INCF*; and *EXAC* is the accruals excluded from headline earnings, i.e., *ACCR – INAC.* We deflate each component by the average total assets to enhance cross-sectional comparability.

5.2 Earnings persistence (Hypothesis 1)

In order to investigate the persistence of the various earnings components, we follow Dechow and Ge (2006). The analysis begins with a test of earnings persistence (firm-subscripts omitted):

$$EARN_{t+1} = \gamma_0 + \gamma_1 INHE_t + \gamma_2 EXHE_t + \varepsilon_t \quad (6)$$

We predict that $\gamma_1 > \gamma_2$, showing that headline earnings is more persistent than headline earnings exclusions (H1a). We follow Sloan (1996) to test Hypothesis 1b:

[7] Although the total accrual definition solves the measurement error of the *CF* and *ACCR* variables, the assumption that all special items affect only accruals results in an erroneous measurement of the subcomponents of *ACCR* in Dechow and Ge's (2006) study.

$$EARN_{t+1} = \gamma_0 + \gamma_1 ACCR_t + \gamma_2 CF_t + \varepsilon_t \quad (7)$$

Consistent with Sloan (1996), we expect that $\gamma_1 > \gamma_2$, showing that the accrual component of earnings is less persistent than the cash component of earnings (H1b). Finally, we deconstruct accruals into those included and excluded from headline earnings.

$$EARN_{t+1} = \gamma_0 + \gamma_1 INCF_t + \gamma_2 INAC_t + \gamma_3 EXAC_t + \varepsilon_t \quad (8)$$

We predict that $\gamma_2 > \gamma_3$ (H1c), indicating that the transitional/non-recurring nature of items excluded from headline earnings results in lower persistence of headline earnings exclusions than the persistence of other earnings components.

Tests involving *total* accruals follow a similar pattern, except that *CF* can be deconstructed into *INCF* and *EXCF*. The final equation is as follows:

$$EARN_{t+1} = \gamma_0 + \gamma_1 INCF_t + \gamma_2 EXCF_t + \gamma_3 INAC_t + \gamma_4 EXAC_t + \varepsilon_t \quad (9)$$

We predict that $\gamma_3 > \gamma_4$(H1c), while $\gamma_1 > \gamma_2$ (H1d), indicating that the transitional/non-recurring nature of items excluded from headline earnings result in lower persistence of headline earnings exclusions compared to the persistence of other earnings components. All the variables are defined in Section 4.1. We follow Dechow and Ge (2006) in trimming 1% of the tails of all variables except, *EXHE*, *EXAC* and *EXCF*.[8]

5.3 Pricing of earnings components (Hypothesis 2)

We use the Mishkin test, first introduced by Sloan (1996) in the accounting literature, to test the pricing of earnings components. The Mishkin test requires the specification of two equations, namely a forecasting equation and a pricing equation and is an iterative non-linear maximum likelihood estimation procedure that jointly estimates the parameters of the

[8] As an alternative to controlling for outliers by eliminating 1% of the tails of the financial statement variables, consistent with the suggestions of Dechow *et al.* (2008), we winsorize each financial statement deflated component to the 1st and 99th percentiles to mitigate problems with outliers. Our inferences regarding the pricing of headline earnings exclusions remain the same.

equations. The forecasting equations are eqs. (8) and (9). The pricing equation, using the *operating* accrual definition, is specified as follows (firm subscripts omitted):[9]

$$SARET_{t+1} = \beta(EARN_{t+1} - \gamma_0 - \gamma_1^* INCF_t - \gamma_2^* INAC_t - \gamma_3^* EXAC_t) + \nu_{t+1} \quad (10)$$

The pricing equation using the *total* accrual definition is as follows (firm subscripts omitted):

$$SARET_{t+1} = \beta(EARN_{t+1} - \gamma_0 - \gamma_1^* INCF_t - \gamma_2^* EXCF_t - \gamma_3^* INAC_t - \gamma_4^* EXAC_t) + \nu_{t+1} \quad (11)$$

In these equations, all the variables are defined as previously, except for *SARET*, which represents the size-adjusted return. Joint nonlinear estimation of eq. (8) [eq. (9)] and eq. (10) [eq. (11)] uses the information in returns to infer how the market uses information in $INCF_t, EXCF_t, INAC_t$ and $EXAC_t$ to forecast $EARN_{t+1}$.

The Mishkin test compares the weight applied to the components in the forecasting equation to the weighting of these variables in the pricing equation (Kraft *et al.*, 2007). If the weights are not equal, one can infer that the market does not price the information rationally, based on its historical characteristics.

To control for risk, we follow Sloan (1996), Xie (2001), and others and employ size-adjusted returns. For each firm-year, *SARET* is calculated for a 12-month period beginning four months after the end of the financial period. *SARET* is determined by subtracting the return on a size-matched portfolio from the raw return. The portfolios are rebalanced twice per year, based on the two most common balance sheet dates in the sample. An equal-weighted portfolio return is computed for each size portfolio in each period.[10]

[9] Before commencing with an analysis of the sub-components of earnings of interest to this study, we first evaluate the pricing of the following earnings components in separate tests (in the interest of brevity we do not specify these models separately): *EARN*, *INHE* and *EXHE*, and *CF* and *ACCR*.

[10] We repeat the analysis for all the tests using value-weighted size-adjusted returns, where the weighting is based on a firm's size within a decile portfolio. Our main inferences regarding the pricing of headline earnings exclusions remain the same.

6 Descriptive statistics

Table 2 reports summary descriptive statistics for the main sample. $EARN_{t+1}$has a mean (median) of 0.107 (0.108), whereas $EARN_t$ has a mean (median) of 0.078 (0.094). $INHE_t$ has a mean (median) of 0.091 (0.097), which reflects that recurring items are, on average, positive. The mean (median) of $EXHE_t$ is -0.014 (0.000), which shows that, on average, exclusions from headline earnings are losses or expenses that increase headline earnings. Operating cash flows has a mean (median) of 0.121 (0.119), while total cash flows has a mean (median) of -0.003 (0.026). Operating accruals reflect a mean (median) of -0.043 (-0.036), whereas total accruals has a mean (median) of 0.081 (0.050).

Insert Table 2

Table 3 reports Spearman (Pearson) correlations above (below) the diagonal for the variables used in the analysis. Consistent with Dechow and Ge (2006), there is a positive and significant Spearman correlation between current earnings and operating accruals (0.308) and total accruals (0.394). There is also a positive and significant correlation between current earnings and operating cash flows (0.619) and total cash flows (0.367).

Insert Table 3

All the variables, except for accruals included in headline earnings, display a statistically significant Spearman correlation with one-year ahead earnings. In the Pearson correlation only $INAC_t$ (total accruals), and $EXCF_t$ are not significantly correlated with one-year ahead earnings. Consistent with Dechow (1994), there is a statistically significant negative correlation between cash flows and accruals.

Similar to the findings of Dechow and Ge (2006), the correlation between cash flows and accruals is stronger using the total accrual definition than using the operating accrual definition. The statistically positive correlation between headline earnings exclusions and accruals is much stronger than the positive correlation between headline earnings exclusions

and cash flows. This indicates that, as is the case with special items in the U.S., most exclusions from headline earnings affect accruals, but do not affect cash flows. In the Spearman correlations, one-year ahead earnings, operating and total cash flows, cash flows included in headline earnings, total accruals, total accruals included in headline earnings, and total accruals excluded from headline earnings display a statistically significant correlation with one-year ahead size-adjusted returns. As expected, there is a strong correlation between the individual components of earnings measured using the operating accrual definition and the components of earnings measured using the total accrual definition.

7 Results

7.1 Hypotheses 1: Earnings persistence

Table 4 displays the results from OLS regressions on one-year ahead earnings on components of current earnings. The results of Model 1 indicate that the persistence of earnings is 0.629. A decomposition of earnings into headline earnings and headline earnings exclusions in Model 2 shows that the persistence of headline earnings (0.741) is significantly greater than headline earnings exclusions (0.398). This result is consistent with H1a.

Insert Table 4

Using the operating accrual definition in Model 3, the persistence of cash flows is 0.773, while the persistence of accruals is 0.493. This is consistent with Sloan (1996), Xie (2001), and Dechow and Ge (2006). An *F*-test rejects the null hypothesis that the coefficient of cash flows is equal to the coefficient of accruals using the operating accrual definition (*F*-value = 50.14; *p*-value < 0.01). This finding is consistent with H1b.[11]

[11] Similar inferences can be made by using the total accrual definition in Model 5, which shows a coefficient of 0.708 on cash flows and a coefficient of 0.586 on accruals. An *F*-test confirms that these two coefficients are statistically different from each other (*F*-value = 31.40; *p*-value < 0.01).

A decomposition of accruals into items in headline earnings and items excluded from headline earnings (Model 4) indicates that the component excluded from headline earnings is less persistent than other accruals (0.394 vs 0.574 using the operating accrual definition, and 0.387 vs 0.684 using the total accrual definition). This is similar to the findings of Dechow and Ge (2006) relating to special items. Headline earnings exclusions appear to be a driver of the lower persistence of accruals. In particular, the persistence parameter on accruals increases from 0.493 (*ACCR*) to 0.574 (*INAC*) using the operating definition of accruals, while the parameter increases from 0.586 (*ACCR*) to 0.684 (INAC) for using the total accrual definition. *F*-tests confirm that the coefficients on *INAC* and *EXAC* are not equal, using both definitions of accruals (Operating: *F*-value = 6.24 and *p*-value = 0.013; Total: *F*-value = 20.15 and *p*-value < 0.01). Taken together, these findings support the prediction made in H1c. Consistent with Model 3, *INCF* continues to show higher persistence than accruals after removing non-recurring/transitory items, i.e., *INAC* (Operating: *F*-value = 28.95 and *p*-value < 0.01; Total: *F*-value = 26.97 and *p*-value < 0.01).

When the total accrual definition (Model 6 – Table 4) is used, it is evident that the cash flow component excluded from headline earnings (0.395) is significantly less persistent than the cash flow component included in headline earnings (0.798). This finding supports H1d. However, there is no significant difference between the persistence of accruals excluded from headline earnings (*EXAC*) and cash flows excluded from headline earnings (*EXCF*)(*F*-value = 0.01; *p*-value = 0.936). They exhibit equally low persistence.

Combined, consistent with the prior literature based in the U.S., the persistence results indicate that the cash flow component of earnings is more persistent than the accrual component of earnings. Headline earnings exclusions have consistently lower persistence, relative to other earnings components in all the models. In particular, headline earnings exclusions appear to be a driver of the lower persistence of aggregate accruals, relative to

cash flows. This suggests that the mandatory disaggregation of these items may be able to provide useful information to investors.

7.2 Hypothesis 2: Pricing of earnings, headline earnings components, and disaggregated earnings

Table 5 presents the results on the pricing of *EARN* and its components *INHE* and *EXHE* using the Mishkin test. Panel A indicates that the persistence parameter of earnings is 0.629 (this is equivalent to the result reported in Table 4), while investors attach a weight of 0.531 to earnings. The likelihood test for market efficiency is 1.28 (p-value = 0.257) – hence, the null hypothesis of market efficiency is not rejected. This result suggests that earnings is not significantly mispriced.

Insert Table 5

In panel B of Table 5, earnings is decomposed into headline earnings (*INHE*) and headline earnings exclusions (*EXHE*). The coefficient on *INHE* in the forecasting equation is 0.741, while the coefficient in the pricing equation is 0.676. This evidence suggests that the market does not significantly misprice the persistence of headline earnings in South Africa. The likelihood test for market efficiency is 0.37 (p-value = 0.545), which implies that the null hypothesis of market efficiency cannot be rejected.

The coefficient on *EXHE* in the forecasting equation of panel B in Table 5 is 0.389. The coefficient in the pricing equation is 0.238. The likelihood test for market efficiency of 0.96 does not reject market efficiency, which suggests that investors do not misprice headline earnings exclusions significantly. This is consistent with the implications of headline earnings exclusions for future earnings being relatively clear because of their non-recurring/transitory nature.

Table 6 documents the results of the pricing of the accrual and cash flow components of earnings using the operating accrual definition in columns 2-4. The forecasting coefficient

on the cash flow component is 0.773 in panel A; the pricing coefficient is 0.587. The likelihood ratio statistic of 2.99 confirms a marginal underweighting of the cash flow component of earnings at a 10% level of significance. The results in panel A suggest that investors do not misprice the accrual component of earnings significantly. In particular, the null hypothesis of market efficiency is not rejected in terms of the Mishkin test. This result is inconsistent with the accrual anomaly, which is characterized by significant overweighting of accruals and significant underweighting of cash flows (Dechow and Ge, 2006; Sloan, 1996). The underweighting of the cash flow component of earnings whereas the accrual component is not significantly mispriced, is consistent with Pincus et al. (2007) who find a similar pattern in France, Italy, Japan, Sweden, Switzerland, and Taiwan.

Insert Table 6

In panel B of Table 6, the cash flow and accrual components of earnings are subdivided further into items included and excluded from headline earnings. Consistent with the main results in panel A of Table 6, neither accrual component is significantly mispriced. However, the marginal underpricing of the cash flow component documented in panel A is not evident.

Table 6 documents the pricing of earnings components using the total accrual definition in columns 5-7. The forecasting coefficient on the cash flow component of earnings is 0.708; the pricing coefficient is 0.394. The statistically significant likelihood ratio statistic suggests that investors underweight the cash flow component significantly. However, the Mishkin test confirms that the total accrual component of earnings is not significantly mispriced. Overall, these findings are consistent with those reported for the operating accrual definition in columns 2-4.

Columns 5-7 in panel B of Table 6 documents the results for a further decomposition of the total cash flow and accrual components into components included and excluded from

headline earnings. The forecasting coefficient of the cash flow component included in headline earnings is 0.798, while the pricing coefficient is 0.564. This is indicative of underweighting of the cash flow component included in headline earnings. The likelihood test for market efficiency is 3.96 (p-value = 0.047), so the null hypothesis of market efficiency is rejected for *INCF* when total accruals are used. However, *INCF* is the only component in columns 5-7 of Table 6, panel B that shows significant mispricing.

Tables 5 and 6 reveal a consistent picture. First, none of the four headline earnings exclusion components is significantly mispriced. The results contradict the findings of Dechow and Ge (2006) and Atwood and Xie (2010), who report mispricing of special items in the U.S. The results imply that investors find the headline earnings disaggregation scheme in South Africa useful in predicting the future implications of transitory or non-recurring items. Second, there is some evidence in Table 6 that the cash flow component of earnings shows evidence of underpricing, while accruals do not reflect significant mispricing. While this does not accord fully with H2, we find this result is not robust when alternative tests are used and control variables are included.

8 Additional analyses

Kraft *et al.* (2007) argue that it is not apparent that the Mishkin test offers any advantages over ordinary least squares (OLS) estimation. Using a sample of 65,411 firm-year observations, they show that similar inferences are drawn from both these tests, implying that when samples are large, OLS estimation is asymptotically equivalent to the Mishkin test (Kraft *et al.,* 2007). Thus, we employ Kraft et al.'s (2007) OLS approach as an additional analysis, and in doing so, we show that their approach can be used in samples that are significantly smaller than theirs.

Specifically, we first consider the equivalence of the Mishkin test and OLS in our sample using the following OLS regression, based on the *operating* accrual definition (firm subscripts omitted):

$$SARET_{t+1} = \delta_0 + \delta_1 INCF_t + \delta_2 INAC_t + \delta_3 EXAC_t + \varepsilon_t \quad (12)$$

For the total accrual definition, we use the following specification (firm subscripts omitted):

$$SARET_{t+1} = \delta_{0+} \delta_1 INCF_t + \delta_2 EXCF_t + \delta_3 INAC_t + \delta_4 EXAC_t + \varepsilon_t \quad (13)$$

To provide evidence on H2, we test whether δ_1, δ_2, $\delta_3$and δ_4 are significantly different from zero. Coefficients significantly different from zero indicate mispricing, and H2 would be rejected. In particular, a significantly positive (negative) coefficient is consistent with underpricing (overpricing). A coefficient indistinguishable from zero provides evidence that the component is priced in a manner that is consistent with its observed level of persistence.

Kraft *et al.* (2007) show that in large samples the coefficients from the OLS specification in eq. (12) and eq. (13) are related to the coefficients from the Mishkin test as follows: $\delta_{OLS} = \beta(\gamma_k - \gamma_k^*)$, where δ_{OLS} is the parameter estimates from the OLS specifications in eq. (12) and eq. (13), γ_k is the coefficient from the Mishkin forecasting equations specified in eq. (8) and eq. (9), γ_k^* is the coefficient from the Mishkin pricing equations specified in eq. (10) and eq. (11), and β is the scalar on earnings in the Mishkin test. Our results (untabulated) for both the operating and total accruals definitions show that the OLS coefficients can be reconciled exactly to the relevant Mishkin parameters, indicating that the OLS approach is asymptotically equivalent to the Mishkin approach in samples as small as 1,618.

Having documented the equivalence of the two methods, we use an extended version of the OLS method in an attempt to address some research design issues. Our design has a number of advantages. First, it is possible to control for survivorship bias better by including

delisting firm years in the sample.[12] To mitigate survivorship bias, when a firm delists, we assume that the delisting proceeds are reinvested in the same size decile, equally among all remaining shares, on the termination date. The alternative design employed in this section does not require data for $EARN_{t+1}$. The inclusion of the additional observations increases the number of firms in the sample by 35 and the number of firm-year observations by 127.

Second, Kraft *et al.* (2007) suggest that the Mishkin test is subject to an omitted variables problem. In particular, Kraft *et al.* (2007) show that, in the U.S., the negative association between current period accruals and future share returns no longer exists when other explanatory variables are included in their analysis. Whereas Kraft *et al.* (2007) are concerned about whether the overweighting of accruals is evident when other explanatory variables are taken into account, we are interested in ascertaining whether the accurate pricing of earnings components documented in the main results, in particular headline earnings exclusions, is robust to the inclusion of additional explanatory variables. We include two sets of additional explanatory variables in our OLS regression models. The first set is additional market variables – size, the book-to-market ratio, the earnings-to-price ratio, and the current period size-adjusted return and share price[13] (Desai *et al.*, 2004; Dopuch *et al.*, 2010; Drake *et al.*, 2009; Kaserer and Klingler, 2008; Kraft *et al.*, 2007; Pincus *et al.*, 2007). The second set is the additional financial statement variables included by Kraft *et al.* (2007) - current period sales, change in sales, current period capital expenditure, change in capital expenditure, net operating assets, lagged cash flows, and lagged accruals.

Finally, this specification facilitates control for cross-sectional and time-series dependence in the data. Eqs. (6) to (13) are estimated by pooling observations across firms

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[12] Beaver et al. (2007) show that inferences drawn from studies of market efficiency are sensitive to the exclusion of delisting returns.

[13] Various researchers offer a risk-based explanation for the mispricing of accruals (Khan, 2008; Wu *et al.*, 2010). We control for the two most common risk factors by including size and the book-to-market ratio (Desai *et al.*, 2004; Drake *et al.*, 2009; Pincus *et al.*, 2007). Size is included because size-adjusted returns may not fully control for the size effect (Yu, 2007).

and over time. This is done because year-by-year estimation using the Mishkin test ignores information about the estimated standard errors that the joint estimation of the forecasting and pricing equations underlying the Mishkin test is designed to use (Kraft *et al.*, 2007). We address this concern by estimating eqs. (14) and (15) (below) after controlling for year-fixed effects through dummy variables and clustering standard errors by firm.[14]

In the spirit of Kraft et al. (2007), the following model is estimated using the *operating* accrual definition (firm subscripts are omitted):

$$\begin{aligned} SARET_{t+1} \quad = \quad & \alpha_0 + \alpha_1 INCF_t + \alpha_2 INAC_t + \alpha_3 EXAC_t + \alpha_4 SARET_t + \\ & + \alpha_5 SALES_t + \alpha_6 \Delta SALES_t + \alpha_7 CAPEX_t + \alpha_8 \Delta CAPEX_t + \\ & \alpha_9 NOA_t + \alpha_{10} CF_{t-1} + \alpha_{11} ACCR_{t-1} + \alpha_{12} SARET_t + \\ & \sum \alpha_k SIZE_t^{dec} + \sum \alpha_k BM_t^{dec} + \sum \alpha_k EP_t^{dec} + \sum \alpha_k PRICE_t^{dec} + \\ & \varepsilon_{t+1} \end{aligned} \tag{14}$$

The following model is estimated using the *total* accrual definition (firm subscripts are omitted):

$$\begin{aligned} SARET_{t+1} \quad = \quad & \alpha_0 + \alpha_1 INCF_t + \alpha_2 EXCFt + \alpha_3 INAC_t + \alpha_4 EXAC_t + \alpha_5 SARET_t + \\ & \alpha_6 SALES_t + \alpha_7 \Delta SALES_t + \alpha_8 CAPEX_t + \alpha_9 \Delta CAPEX_t + \alpha_{10} NOA_t + \\ & \alpha_{11} CF_{t-1} + \alpha_{12} ACCR_{t-1} + \alpha_{13} SARET_t + \sum \alpha_k SIZE_t^{dec} + \\ & \sum \alpha_k BM_t^{dec} + \sum \alpha_k EP_t^{dec} + \sum \alpha_k PRICE_t^{dec} + \varepsilon_{t+1} \end{aligned} \tag{15}$$

where all variables are as defined previously, except for *SIZE* which is the natural logarithm of market capitalization measured four months after the reporting date;[15] *BM* which is the book-to-market ratio measured as #02010013/market capitalization four months after the reporting date; *EP* which is headline earnings per share (#02020086) scaled by adjusted price,

[14] A method that can be used to address both forms of dependence is using two-way cluster-robust standard errors (Gow *et al.*, 2010). It is a limitation of cluster-robust standard errors that the asymptotic justification assumes that the number of clusters goes to infinity (Cameron *et al.*, 2008). In such a case, the cluster-standard robust errors are biased downwards, resulting in an over-rejection of the null hypothesis (Cameron *et al.*, 2008; Gow *et al.,* 2010). In the current study, there are eight clusters along the time dimension. Hence, this method is not considered appropriate for the current study.

[15] Where the market capitalisation four months after the reporting date is zero, for example, because the firm has delisted prior to this date, size is taken as the market capitalisation on the last month-end date on which it is greater than zero.

measured four months after the reporting date; *PRICE* which is share price four months after the reporting period; *SALES* which is current period sales (#02020060); Δ*SALES* which is change in sales; *CAPEX* which is current period capital expenditure (#01030719), Δ*CAPEX* which is change in capital expenditure; and *NOA* which is net operating assets (#02010021 + #02010045 + #02010046 - #02010031 - #02010037). The variables except *SARET*, *SIZE*, *BM, EP* and *PRICE* are deflated by average total assets. All the variables except *SIZE, BM, EP* and *PRICE* are winsorized for each year to the 1st and 99th percentile. Like Kraft *et al.* (2007), we use indicator variables to capture a firm's membership in one of ten *SIZE*, *BM*, *EP* and *PRICE* deciles each year.[16]

Table 7 displays the results for aggregate earnings (panel A) and a disaggregation of earnings into headline earnings and headline earnings exclusions (panel B). When the models are estimated without the additional explanatory variables, i.e., the "Reduced Model", aggregate earnings now shows significant underweighting. This differs from our main results, arguably because tests of mispricing are sensitive to the inclusion of delisted firms (Beaver et al. 2007). Similarly, headline earnings reflects significant underpricing when the additional explanatory variables are excluded from the regressions. However, headline earnings exclusions appear not to be significantly mispriced. This latter finding is consistent with our main results. When the additional explanatory variables are included, i.e., the "Full Model", aggregate earnings and headline earnings no longer reflect significant mispricing. The most significant additional variables are current period size-adjusted returns and lagged cash flows, which reflect significant underpricing in most of the regressions.

Table 8, columns 2-5 displays the results of the pricing tests for components of earnings calculated using the operating accrual definition. Panel A provides the results for a simple decomposition into cash flows and accruals. Panel B provides the results where

[16] Since the regression models contain a number of variables, such as *SALES*, Δ*SALES, CAPEX,* Δ*CAPEX* and *NOA,* which are difficult to define for financial firms, we exclude financial firms for these tests.

earnings is decomposed into headline earnings components. As is the case with the main sample, both the cash flow component (panel A) and cash flows included in headline earnings (panel B) reflect significant underpricing when the models are estimated without the additional explanatory variables. This finding is robust to alternative methods of calculating the *t*-statistic. Once the additional explanatory variables are included in the models, the underpricing of the cash flow components vanishes.

Table 8, columns 7-10 contain the results for the pricing tests using the total accrual definition to calculate the earnings components for both the basic (panel C) and headline earnings (panel D) disaggregations. As in the main sample, the cash flow component (panel C) and the cash flows included in headline earnings (panel D) exhibit significant underpricing when the additional explanatory variables are not included in the model. When the additional explanatory variables are included in the models, the significant underpricing of the cash flow components is no longer evident.

Overall, the results of this section reveal that when the additional explanatory variables are ignored, investors underweight cash flow components (other than headline earnings exclusions) significantly, but they generally price other earnings components (i.e., accruals) in accordance with the actual levels of persistence of these components. When additional explanatory variables are included in the specifications, none of the earnings components reflects significant mispricing. This evidence suggests that the underweighting of the cash flow components of earnings is driven by variables that are correlated with cash flows. The results of our full model are consistent with H2. More importantly, unlike Atwood and Xie (2010) and Dechow and Ge (2006) who find significant mispricing of special items in the United States, headline earnings exclusions are not significantly mispriced in any of our models.

9 Conclusion

It is well documented that investors are unable to price non-recurring items (special items) in a manner consistent with the actual level of persistence of this component. This anomaly remains puzzling, as the consequences of special items for future earnings should be relatively clear to investors. Recent evidence suggests that the mispricing of special items may be caused in part by managers' discretionary treatment of special items (Fairfield *et al.*,2009; McVay, 2006). Thus far, studies have not been able to consider whether the mandatory disaggregation of non-recurring items from earnings would improve pricing efficiency because few countries require such disclosure. South Africa is an exception. All South African firms are required to provide a headline earnings figure which removes most non-recurring items. We therefore use this setting to examine whether the mandatory disaggregation of non-recurring items and the required disclosure of items excluded from headline earnings can reduce the mispricing of these and other items.

The tests reveal that investors significantly underweight the cash flow component of earnings, while other components of earnings reflect little mispricing. When additional explanatory variables are added to the models, the mispricing of the cash flow component of earnings is no longer evident. Most importantly, we find no evidence that accruals, whether they are included or excluded from headline earnings, are mispriced.

Our findings have implications for the IASB and FASB as they deliberate on alternative presentation models for earnings. As our setting differs from prior studies that examine the pricing of special items where such items are reported voluntarily (e.g., Burgstahler *et al.* 2002, Dechow and Ge 2006), we can provide unique insights. Our results suggest that mandating that firms separate the recurring and nonrecurring components of accruals and cash flows can help investors price the components of earnings in a manner that is consistent with the level of persistence of these components. This suggests that the

mandatory disaggregation of earnings can neutralize the opportunism that affects special items in voluntary settings such as the U.S. That is, a standardized disaggregation scheme could reduce managerial discretion and increase the credibility and precision of earnings items that are nonrecurring in nature.

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Appendix 1: JSE Listings Requirements on Headline Earnings

The following represents an abstract from the JSE Listings Requirements pertaining to headline earnings per share (JSE, 2011):

Definitions

Headline earnings: as defined and calculated in terms of SAICA Circular 3/2009, Headline Earnings, as amended from time to time.

Minimum contents of annual financial statements

8.63 In addition to complying with IFRS, issuers are required to disclose the following information in the annual financial statements:

(b) headline earnings per share:

in respect of each current financial year and the immediately preceding financial year, a headline earnings per share and diluted headline earnings per share figure must be disclosed, together with an itemised reconciliation between headline earnings and the earnings used in the calculation of earnings per share.

Appendix 2: Extract from Circular 3/2009

Paragraphs 21 and 22 of Circular 3/2009 (SAICA, 2009), list the allowable exclusions from headline earnings per IFRS. The following table represents an extract from paragraph 21:

Standard	Item	In headline earnings	Out of headline earnings	Reason(s)
IAS 36	*Impairment of Assets* Any impairment/ subsequent reversal of an impairment covered in this standard. (Note: The scope of IAS 36 excludes items that are likely to be classified as current assets.)		X	Re-measurement of an asset.
IAS 37	*Provisions, Contingent Liabilities and Contingent Assets* Any adjustments or re-measurements recognised in the income statement in terms of this standard.	X		Included re-measurement (i) as defined.
IAS 38	*Intangible Assets* • Amortisation. • Impairment/subsequent reversal of an impairment. • Disposal gains/losses. (Note: The revaluation of an intangible is not included in profit and is therefore automatically excluded from headline earnings.)	X	 X X	• Included re-measurement (ii) as defined. • Re-measurement of an asset. • Re-measurement of an asset.

Appendix 3: Example of Headline Earnings Disclosure

The Bidvest Limited Group can be used as an example to illustrate the disclosure and presentation practices of headline earnings. The Bidvest Limited Group presented its earnings per share information on the face of its income statement for the year ended 30 June 2008 as follows (Bidvest, 2008):

		2008	2007
Basic earnings per share (cents)	5	1 073,0	899,4
Diluted earnings per share (cents)	5	1 055,9	878,3
Headline earnings per share (cents)	5	1 068,0	970,0

The following reconciliation between basic earnings and headline earnings is provided in Note 5 to the Group's financial statements (Bidvest, 2008):

	2008 R'000	2007 R'000
5. Earnings per share *(continued)*		
Headline earnings (R'000)		
Profit attributable to shareholders of the Company	3 252 884	2 700 054
Impairment of property, plant and equipment; intangible assets and goodwill	59 639	65 707
Property, plant and equipment and intangible assets	46 969	585
Goodwill	16 753	65 122
Tax relief	(4 083)	–
Net loss on disposal of interest in subsidiaries and associates, and disposal and closure of businesses	54 163	595
Loss (profit) on disposal and closure	60 480	(84)
Tax charge (relief)	(6 317)	679
Net profit on disposal of property, plant and equipment and intangible assets	(42 419)	(12 835)
Property, plant and equipment	(46 789)	(15 409)
Intangible assets	42	–
Tax charge	4 328	1 984
Minority shareholders	–	590
Negative goodwill	(86 463)	–
Arising on acquisition of subsidiaries	(86 496)	–
Minority shareholders	33	–
Impairment of investment in associate and share of capital items in associate	–	158 465
Headline earnings	3 237 804	2 911 986
Headline earnings per share (cents)	1 068,0	970,0
Diluted headline earnings per share (cents)	1 051,0	947,2
Dilution (%)	1,6	2,3

TABLE 1
Sample Composition

Panel A: Sample selection: 2001 to 2008	**Firms**	**Firm-year observations**
JSE Main Board	570	2,832
Insufficient data	(73)	(358)
Financial firms excluded	(121)	(615)
Foreign non-financial firms excluded	(31)	(133)
Total sample	345	1 726
Extreme observations excluded	(14)	(108)
Trimmed sample	331	1,618

Panel B: JSE Industry classification

Industry	**Unique firms**		**Firm-year observations**	
	N	**%**	**N**	**%**
Consumer services	73	22.1	362	22.4
Consumer goods	35	10.6	201	12.4
Industrials	108	32.6	504	31.2
Basic materials	61	18.4	298	18.4
Health care	10	3.0	40	2.5
Technology	36	10.9	172	10.6
Telecommunications	6	1.8	25	1.5
Utilities	1	0.3	8	0.5
Oil and gas	1	0.3	8	0.5
	331	100.0	1,618	100.0

TABLE 2
Descriptive Statistics

Variable	Mean	Standard deviation	Minimum	Percentile 25	Median	Percentile 75	Maximum
$SARET_{t+1}$	0.020	0.538	-4.129	-0.209	0.036	0.295	5.618
$EARN_{t+1}$	0.107	0.222	-1.147	0.034	0.108	0.191	1.434
$EARN_t$	0.078	0.174	-1.228	0.031	0.094	0.157	0.578
$INHE_t$	0.091	0.138	-0.597	0.036	0.097	0.159	0.578
$EXHE_t$	-0.014	0.092	-1.045	-0.008	0.000	0.002	0.439
Operating Accruals							
CF_t	0.121	0.147	-0.671	0.042	0.119	0.201	0.645
$ACCR_t$	-0.043	0.149	-1.088	-0.094	-0.036	0.021	0.587
$INAC_t$	-0.029	0.115	-0.568	-0.085	-0.032	0.023	0.522
$EXAC_t$	-0.014	0.092	-1.045	-0.008	0.000	0.002	0.439
Total Accruals							
CF_t	-0.003	0.227	-1.377	-0.068	0.026	0.114	0.646
$INCF_t$	-0.025	0.228	-1.425	-0.094	0.009	0.096	0.538
$EXCF_t$	0.021	0.050	-0.002	0.001	0.006	0.019	0.681
$ACCR_t$	0.081	0.245	-1.020	-0.023	0.050	0.143	1.765
$INAC_t$	0.116	0.227	-0.625	0.005	0.073	0.172	1.769
$EXAC_t$	-0.035	0.102	-1.113	-0.033	-0.010	-0.002	0.402

The table sets out descriptive statistics for all the variables used in the regression analysis for the sample period from 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails.

TABLE 3
Spearman and Pearson Correlations

							Operating Accrual Definition				*Total Accrual Definition*					
	Variable	$SARET_{t+1}$	$EARN_{t+1}$	$EARN_t$	$INHE_t$	$EXHE_t$	CF_t	$ACCR_t$	$INAC_t$	$EXAC_t$	CF_t	$INCF_t$	$EXCF_t$	$ACCR_t$	$INAC_t$	$EXAC_t$
	$SARET_{t+1}$	1	**0.270**	0.009	-0.004	0.008	**0.058**	-0.038	**-0.050**	0.008	**0.097**	**0.109**	-0.037	**-0.079**	**-0.103**	**0.052**
	$EARN_{t+1}$	**0.289**	1	**0.674**	**0.659**	**0.132**	**0.533**	**0.097**	0.031	**0.132**	**0.341**	**0.365**	**-0.076**	**0.190**	**0.113**	**0.184**
	$EARN_t$	0.028	**0.495**	1	**0.918**	**0.285**	**0.619**	**0.308**	**0.168**	**0.285**	**0.367**	**0.377**	**-0.079**	**0.394**	**0.273**	**0.293**
	$INHE_t$	0.018	**0.480**	**0.852**	1	0.043	**0.668**	**0.186**	**0.181**	0.043	**0.364**	**0.389**	**-0.110**	**0.342**	**0.305**	**0.119**
	$EXHE_t$	0.026	**0.219**	**0.620**	**0.117**	1	0.025	**0.330**	0.042	**1.000**	**0.063**	0.030	**0.103**	**0.211**	0.022	**0.583**
Operating	CF_t	0.044	**0.409**	**0.579**	**0.673**	**0.089**	1	**-0.432**	**-0.501**	0.025	**0.622**	**0.642**	-0.030	**-0.095**	**-0.152**	**0.066**
	$ACCR_t$	-0.011	**0.175**	**0.598**	**0.333**	**0.636**	**-0.306**	1	**0.889**	**0.330**	**-0.278**	**-0.290**	-0.034	**0.599**	**0.508**	**0.268**
	$INAC_t$	-0.035	**0.052**	**0.281**	**0.338**	0.026	**-0.468**	**0.788**	1	0.042	**-0.357**	**-0.359**	**-0.051**	**0.541**	**0.583**	**0.055**
	$EXAC_t$	0.026	**0.219**	**0.620**	**0.117**	**1.000**	**0.089**	**0.636**	0.026	1	**0.063**	0.030	**0.103**	**0.211**	0.022	**0.583**
Total	CF_t	**0.117**	**0.251**	**0.274**	**0.289**	**0.087**	**0.506**	**-0.177**	**-0.299**	**0.087**	1	**0.962**	**0.050**	**-0.602**	**-0.647**	0.008
	$INCF_t$	**0.121**	**0.260**	**0.283**	**0.309**	**0.074**	**0.532**	**-0.192**	**-0.308**	**0.074**	**0.976**	1	**-0.106**	**-0.557**	**-0.667**	**0.126**
	$EXCF_t$	-0.020	-0.043	-0.044	**-0.095**	**0.058**	**-0.122**	**0.068**	0.042	**0.058**	**0.097**	**-0.122**	1	**-0.133**	0.032	**-0.583**
	$ACCR_t$	**-0.089**	**0.119**	**0.457**	**0.338**	**0.360**	**-0.057**	**0.589**	**0.477**	**0.360**	**-0.730**	**-0.702**	**-0.121**	1	**0.889**	**0.281**
	$INAC_t$	**-0.111**	0.031	**0.233**	**0.298**	-0.004	**-0.125**	**0.395**	**0.514**	-0.004	**-0.804**	**-0.816**	**0.065**	**0.910**	1	-0.023
	$EXAC_t$	0.034	**0.218**	**0.580**	**0.151**	**0.874**	**0.140**	**0.540**	0.003	**0.874**	0.032	**0.127**	**-0.435**	**0.383**	-0.035	1

Significance at a 5% level is indicated in bold.

The table sets out Spearman (Pearson) correlations above (below) the diagonal for all the variables used in the regression analysis for the sample period from 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails.

TABLE 4
Persistence of Earnings, Headline Earnings Components, and Disaggregated Earnings

	$EARN_{t+1}$					
	Earnings		***Operating Accruals***		***Total Accruals***	
Model	**(1)**	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	0.058***	0.044***	0.034***	0.031***	0.061***	0.052***
	(10.968)	(7.612)	(5.628)	(4.998)	(11.702)	(8.143)
$EARN_t$	0.629***					
	(22.872)					
$INHE_t$		0.741***				
		(21.322)				
$EXHE_t$		0.398***				
		(7.641)				
CF_t			0.773***		0.708***	
			(22.838)		(23.096)	
$ACCR_t$			0.493***		0.586***	
			(14.826)		(20.663)	
$INCF_t$				0.808***		0.798***
				(22.060)		(21.891)
$EXCF_t$						0.395***
						(3.730)
$INAC_t$				0.574***		0.684***
				(12.359)		(18.862)
$EXAC_t$				0.394***		0.387***
				(7.627)		(7.456)
Adjusted R^2	24.4%	25.6%	26.6%	26.9%	25.8%	26.8%
F-statistics:						
Overall model	523.11***	279.35***	294.58***	199.10***	282.17***	148.64***
INHE =EXHE		27.13***				
CF = ACCR			50.14***		31.40***	
INAC = EXAC				6.24**		20.15***
INCF = INAC				28.95***		26.97***
INCF = EXCF						13.45***
EXCF = EXAC						0.01
N (firm-year observations)	1,618	1,618	1,618	1,618	1,618	1,618

*, ** and *** denote significance at a 10%, 5% and 1% level respectively; t-statistics in parentheses.

The table sets out mean coefficients from OLS regressions for the sample period from2001 to 2008. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails.

TABLE 5
Pricing of Earnings and Headline Earnings Components: Mishkin Test

	Mishkin test		
	Forecasting coefficients	**Pricing coefficients**	**Likelihood ratio statistic of $\gamma_k = \gamma_k^*$**
Panel A			
Intercept	0.058***	0.043	
	(0.005)	(0.016)	
$EARN_t$	0.629***	0.531	1.28
	(0.028)	(0.083)	(0.257)
β (Mishkin)		0.882	
		(0.066)	
Adjusted R^2 (OLS)			
F-statistic (OLS)			
N (firm-year observations)	1 618	1 618	
Panel B			
Intercept	0.044***	0.026	
	(0.006)	(0.017)	
$INHE_t$	0.741***	0.676	0.37
	(0.035)	(0.103)	(0.545)
$EXHE_t$	0.398***	0.238	0.96
	(0.052)	(0.155)	(0.326)
β (Mishkin)		0.901	
		(0.066)	
Adjusted R^2 (OLS)			
F-statistic (OLS)			
N (firm-year observations)	1,618	1,618	

*, ** and *** denote significance at a 10%, 5% and 1% level respectively. The following are indicated in parentheses: for the forecasting and pricing coefficients, asymptotic standard errors; for the likelihood ratio statistic, marginal significance level; for the OLS coefficients, t-stats.

The table sets out mean coefficients from OLS regressions and non-linear maximum likelihood estimation for the sample period 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails.

TABLE 6
Pricing of Disaggregated Earnings: Mishkin Test

	Operating Accruals			Total Accruals		
	Forecasting coefficients	**Pricing coefficients**	**Likelihood ratio statistic of $\gamma_k = \gamma_k^*$**	**Forecasting coefficients**	**Pricing coefficients**	**Likelihood ratio statistic of $\gamma_k = \gamma_k^*$**
Panel A						
Intercept	0.034***	0.034		0.061***	0.036	
	(0.006)	(0.018)		(0.005)	(0.017)	
CF_t	0.773***	0.587	2.99*	0.708***	0.394	9.73***
	(0.034)	(0.103)	(0.084)	(0.031)	(0.099)	(0.002)
$ACCR_t$	0.493***	0.479	0.02	0.586***	0.601	0.03
	(0.033)	(0.100)	(0.899)	(0.028)	(0.089)	(0.865)
β (Mishkin)		0.892			0.854	
		(0.067)			(0.066)	
N (firm-year observations)	1 618	1 618		1 618	1 618	
Panel B						
Intercept	0.031***	0.027		0.052***	0.007	
	(0.006)	(0.019)		(0.006)	(0.020)	
$INCF_t$	0.808***	0.675	1.33	0.798***	0.564	3.96**
	(0.037)	(0.110)	(0.249)	(0.037)	(0.114)	(0.047)
$EXCF_t$				0.394***	0.364	0.01
				(0.106)	(0.325)	(0.935)
$INAC_t$	0.574***	0.678	0.50	0.684***	0.793	0.85
	(0.046)	(0.139)	(0.478)	(0.036)	(0.112)	(0.356)
$EXAC_t$	0.394***	0.238	0.92	0.386***	0.251	0.66
	(0.052)	(0.155)	(0.338)	(0.052)	(0.160)	(0.417)
β (Mishkin)		0.901			0.871	
		(0.067)			(0.067)	
N (firm-year observations)	1,618	1,618		1,618	1,618	

*, ** and *** denote significance at a 10%, 5% and 1% level respectively. The following are indicated in parentheses: for the forecasting and pricing coefficients, asymptotic standard errors; for the likelihood ratio statistic, marginal significance level; for the OLS coefficients, t-stats.

The table sets out mean coefficients from OLS regressions and non-linear maximum likelihood estimation for the sample period from 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails.

TABLE 7
Pricing of Earnings and Headline Earnings Components: Kraft et al. (2007) Approach

	Reduced Model		Full Model	
	Coefficient	**t-stat**	**Coefficient**	**t-stat**
Panel A				
$EARN_t$	0.098	2.32**	-0.031	-0.50
$SARET_t$			0.072	2.18**
$SALES_t$			0.013	1.07
$\Delta SALES_t$			-0.004	-0.10
$CAPEX_t$			-0.171	-0.96
$\Delta CAPEX_t$			0.018	0.08
NOA_t			-0.050	-1.63
CF_{t-1}			0.287	2.96***
$ACCR_{t-1}$			0.055	1.11
N (firm-years)	1,747		1,747	
Panel B				
$INHE_t$	0.153	2.13**	-0.013	-0.11
$EXHE_t$	0.019	0.22	-0.042	-0.46
$SARET_t$			0.072	2.20**
$SALES_t$			0.013	1.07
$\Delta SALES_t$			-0.004	-0.11
$CAPEX_t$			-0.168	-0.94
$\Delta CAPEX_t$			0.017	0.08
NOA_t			-0.050	-1.62
CF_{t-1}			0.281	2.66***
$ACCR_{t-1}$			0.054	1.08
N (firm-years)	1,747		1,747	

*, ** and *** denote significance at a 10%, 5% and 1% level respectively.

The table sets out mean coefficients from regressions for the sample period from 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. *SALES* is current period sales (#02020060) and Δ*SALES* represents the change in sales. *CAPEX* represents capital expenditure calculated as fixed assets acquired (#01030719), while Δ*CAPEX* is the change in capital expenditure. *NOA* is net operating assets calculated as capital employed (#02010021) plus short-term interest-bearing current liabilities (#02010045) plus short-term non-interest-bearing current liabilities (#02010046) minus investment and loans (#02010031) minus cash and near cash (#02010037). The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails. The regressions also include untabulated annual dummy variables for deciles of size (market capitalisation four months after the reporting date), price (share price four months after the reporting date), book to market-ratio (#0201001 / market capitalisation four months after the reporting date) and earnings to price-ratio (headline earnings per share (#02020086) / share price four months after the reporting date). Standard errors are clustered by firm.

TABLE 8
Pricing of Disaggregated Earnings: Kraft et al. (2007) Approach

	Operating Accruals					Total Accruals			
	Reduced Model		Full Model			Reduced Model		Full Model	
	Coefficient	t-stat	Coefficient	t-stat		Coefficient	t-stat	Coefficient	t-stat
Panel A					*Panel C*				
CF_t	0.191	2.49**	0.053	0.49	CF_t	0.256	4.55***	0.119	1.45
$ACCR_t$	0.050	0.98	-0.046	-0.71	$ACCR_t$	0.004	0.07	-0.109	-1.45
$SARET_t$			0.070	2.13**	$SARET_t$			0.056	1.77*
$SALES_t$			0.012	1.03	$SALES_t$			0.012	0.99
$\Delta SALES_t$			-0.006	-0.17	$\Delta SALES_t$			0.006	0.18
$CAPEX_t$			-0.194	-1.10	$CAPEX_t$			0.056	0.29
$\Delta CAPEX_t$			0.032	0.15	$\Delta CAPEX_t$			-0.037	-0.16
NOA_t			-0.048	-1.58	NOA_t			-0.005	-0.18
CF_{t-1}			0.263	2.51**	CF_{t-1}			0.168	2.46**
$ACCR_{t-1}$			0.052	1.05	$ACCR_{t-1}$			0.047	1.09
N (firm-years)	1,747		1,747		N (firm-years)	1,747		1,747	
Panel B					*Panel D*				
$INCF_t$	0.202	2.46**	0.043	0.33	$INCF_t$	0.252	3.33***	0.084	0.74
$INAC_t$	0.081	0.81	-0.061	-0.46	$EXCF_t$	0.085	0.29	0.022	0.07
$EXAC_t$	0.022	0.26	-0.038	-0.41	$INAC_t$	-0.005	-0.05	-0.162	-1.26
$SARET_t$			0.069	2.13**	$EXAC_t$	0.006	0.07	-0.080	-0.79
$SALES_t$			0.012	1.01	$SARET_t$			0.056	1.75
$\Delta SALES_t$			-0.006	-0.16	$SALES_t$			0.011	0.93
$CAPEX_t$			-0.197	-1.09	$\Delta SALES_t$			0.008	0.23
$\Delta CAPEX_t$			0.034	0.16	$CAPEX_t$			0.071	0.37
NOA_t			-0.048	-1.52	$\Delta CAPEX_t$			-0.041	-0.17
CF_{t-1}			0.266	2.45**	NOA_t			-0.003	-0.09
$ACCR_{t-1}$			0.052	1.07	CF_{t-1}			0.170	2.43**
N (firm-years)	1,747		1,747		$ACCR_{t-1}$			0.049	1.12
					N (firm-years)	1,747		1,747	

*, ** and *** denote significance at a 10%, 5% and 1% level respectively.

The table sets out mean coefficients from regressions for the sample period from 2001 to 2008. *SARET* is the size-adjusted return. *SARET* is calculated by deducting the equal-weighted average returns for firms in the same size-matched decile (where size is measured as the market value at the beginning of the return accumulation period) from the buy-and-hold raw return. The accumulation of the monthly buy-and-hold raw return commences four months after the financial period. *EARN* is the profit for the period (#01090305 x #01060206 + #02020072). *INHE* is the headline earnings (#02020086 x #01060206 + #02020072), while *EXHE* is earnings excluded from the headline earnings (*EARN* minus *INHE*).Using the operating accrual definition, *CF* is cash flows from operating activities before dividend payments (#01030714), *ACCR* is *EARN* minus *CF*, *EXAC* equals *EXHE*, and *INAC* is *ACCR* minus *EXAC*. Using the total accrual definition, *CF* is free cash flows (#01030714 - #01030718 + #01030723), *ACCR* is *EARN* minus *CF*, *EXCF* equals free cash flows excluded from the headline earnings (#01030724 + #01030725), *INCF* equals *CF* minus EXCF, *INAC* equals *INHE* minus *INCF*, and *EXAC* equals *ACCR* minus *INAC*. *SALES* is current period sales (#02020060) and Δ*SALES* represents the change in sales. *CAPEX* represents capital expenditure calculated as fixed assets acquired (#01030719), while Δ*CAPEX* is the change in capital expenditure. *NOA* is net operating assets calculated as capital employed (#02010021) plus short-term interest-bearing current liabilities (#02010045) plus short-term non-interest-bearing current liabilities (#02010046) minus investment and loans (#02010031) minus cash and near cash (#02010037). The currency is ZAR. All the above variables except *SARET* are scaled by the average total assets (total assets is Line Item #02010050). Financial statement variables, except for *EXHE*, *EXAC* and *EXCF,* are trimmed at 1% of the tails. The regressions also include untabulated annual dummy variables for deciles of size (market capitalisation four months after the reporting date), price (share price four months after the reporting date), book to market-ratio (#0201001 / market capitalisation four months after the reporting date) and earnings to price-ratio (headline earnings per share (#02020086) / share price four months after the reporting date).