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Chapter 8 Differences in the Role of Accruals for Conditional Conservatism between Profit firms and Loss firms

8.1 Introduction

This chapter examines the role of accruals in conditional accounting conservatism. Accounting conservatism can be divided into two types, unconditional conservatism and conditional conservatism (Beaver and Ryan, 2005). Conditional conservatism reflects the reduction of accounting income due to a contemporaneous economic loss, e.g. more timely earnings recognition of bad news than of good news, and is also called timely loss recognition. I examine the timely recognition (incorporation in earnings) of economic losses for firms with an accounting profit and for firms with an accounting loss.⁶⁴

The timely recognition of unrealized gains and losses is an important attribute of earnings quality (Ball and Shivakumar, 2005). An economic gain or loss represents an alteration in the expectation of future cash flows. Hence, economic gains or losses are often called unrealized gains or losses. This is different from an accounting profit or loss, which represents the realization of all (economic) gains or losses in the income statement. Unrealized gains and losses can be recognized through accruals in the income statement. In this chapter, the difference in the recognition of unrealized economic losses through accruals between firms with an accounting profit respectively an accounting loss is examined.

Firms reporting accounting losses experience higher levels of information asymmetry among investors relative to firms reporting accounting profits (Ertimur, 2004). From a contracting perspective, one of the manners in which financial reporting deals with asymmetric information is by instituting accounting conservatism. For instance, financial reporting standards require a lower verification standard for information about decreases in expected future cash flows (i.e., economic losses) than for increases (i.e., economic gains) (Basu, 1997). Ball and Shivakumar (2005) state that the governance effect of timely loss incorporation is due to it mitigating agency problems associated with managers' investment decisions. Timely loss recognition increases managers' incentives to act quickly to limit economic losses, and thereby increases the efficiency of contracting between firms and managers.

⁶⁴ Accounting loss firms refer to firms that report an accounting loss, i.e., negative earnings before extraordinary items (Compustat data item #123) in their annual income statement. Timely loss recognition refers to the recognition of economic losses, i.e., a downward revision of expected future cash flows.

Timeliness of loss recognition is a summary indicator of the speed with which adverse economic events are reflected in both the income statement and the balance sheet. Ball and Shivakumar (2006) demonstrate the role of accruals in the asymmetry between gain and loss recognition timeliness. They argue that a major role of accruals is to recognize gains and losses in a timely fashion, particularly losses. That is, economic losses are more likely to be recognized on a timely basis, as accrued charges against income, whereas the recognition of economic gains is more likely to be deferred until realized in cash.

Prior research documents a discontinuity at zero in the distribution of earnings, showing an unusually high frequency of firm-year observations with small profits and an unusually low frequency of firm-year observations with small losses (Hayn, 1995; Burgstahler and Dichev, 1997; DeGeorge et al., 1999). Ball and Shivakumar (2005) argue that the asymmetric relation between accruals and cash flows for timely loss recognition helps explain the asymmetric shape of the earnings and earnings changes distributions reported in Burgstahler and Dichev (1977).⁶⁵ They conjecture that much of the shape of the earnings distribution is due to the asymmetric loss recognition role of accruals, combined with the positive correlation between current period cash flows and accrued losses. Timely recognition incorporates unrealized losses in income on an accrued basis, for example as inventory write-downs or as restructuring or asset impairment charges. These accruals are often reflected in the income statement as special items.

Beaver et al. (2005) findings suggest that the discontinuity is at least partly explained by the asymmetric effects of special items for profit firms and loss firms. They show that the magnitude and frequency of negative special items are higher for loss firms than for profit firms. As a result, the earnings distribution only begins to display a striking discontinuity at zero after the inclusion of special items. Special items enhance the discontinuity in net income, causing the discontinuity in the distribution of income before special items to be substantially smaller than that in pretax income after special items.

If the asymmetric relation between accruals and cash flows for timely loss recognition explains the asymmetric shape of the earnings discontinuity, since special items occur more frequently and are more negative for loss firms than profit firms, it can be argued that there is a difference in the timely loss recognition role of accruals between loss firms and profit firms. In this chapter, I hypothesize that accruals are used for timely loss recognition, or

⁶⁵ Ball and Shivakumar (2005) argue that the asymmetric relation between accruals and cash flows for timely loss recognition helps explain the asymmetric shape of the earnings and earnings changes distributions reported in Burgstahler and Dichev (1977). As cash flow falls, the frequency of accrued losses (e.g., provisions, inventory write-downs, asset impairments) rises, thereby moving mass to the left tail of the earnings distribution. The earnings distribution then is missing mass above and immediately below the mean, and has additional mass in the left tail. They argue that much of the shape of the earnings distribution is due to the asymmetric loss recognition role of accruals, combined with the positive correlation between current period cash flows and accrued losses.

conditional conservatism, for firms that incur an accounting loss. Information asymmetry causes management to use accruals to signal the transitory nature of losses. In contrast, for firms that earn an accounting profit, accruals are not used for conditional conservatism. My results confirm this. More specifically, results show that profit firms do not use accruals to reflect an economic loss, as predicted by Ball and Shivakumar (2006). In contrast, loss firms do in fact use accruals to reflect a downward revision in expected future cash flows, consistent with previous literature.

The timely loss recognition role of accrual accounting is especially important for accounting loss firms. For example, Ball and Shivakumar (2005) argue that timely gain and loss recognition increases the usefulness of financial reporting. Ertimur (2004) shows that, on average, loss firms have higher levels of information asymmetry. She shows that, on average, loss firms have higher bid-ask spreads than profit firms. Furthermore, the documented positive association between losses and bid-ask spreads is not driven by firms in financial distress. These results suggest that losses may affect the efficient functioning of capital markets through higher levels of information asymmetry. The use of accruals for timely loss recognition for loss firms mitigates this problem, by incorporating losses in a timely fashion, thereby reducing uncertainty about the prospects of the firm. Ball and Shivakumar (2005) argue that timely gain recognition is less of a concern than timely loss recognition.⁶⁶ The focus in this chapter will therefore be on timely recognition of losses.

Beaver et al. (2005) provide evidence on accounting conservatism by examining the distribution on net income, and show that the asymmetric effect of special items for profit firms and loss firms partly explains the discontinuity at zero in the distribution of earnings. Callen et al. (2006) state that accounting conservatism is mainly facilitated by the special item accruals. Riedl and Srinivasan (2006) show that the use of special items reflects management intent to provide more transparent information via income statement presentation. Therefore, it seems that special items play a major role in timeliness of earnings for losses. Beaver et al. (2005) show that loss firms on average report more special items than profit firms, and that the special items for loss firms are more negative on average. Dechow and Ge (2006) state that “large negative accruals are less likely to be the consequence of the firm recording large positive transitory cash flows as liabilities (i.e., accruals playing a matching role). Instead,

⁶⁶ Ball and Shivakumar (2005; 2006) show that conditional conservatism introduces an asymmetry in the relation between accruals and cash flows. Economic losses are more likely to be recognized on a timely basis, as accrued (i.e., non-cash) charges against income, whereas economic gains are more likely to await recognition until realized in cash. This asymmetry holds for both working capital accruals (e.g., the lower-of-cost-or-market rule for inventories requires income-decreasing but not income-increasing accruals) and long term accruals (e.g., impairing but not revaluing goodwill). It implies that the positive correlation between cash flows and accruals arising from the timely recognition role of accruals is greater in periods with economic losses than in periods with economic gains. See also chapter 3, page 36.

they are more likely to reflect transitory “special items” adjustments that reduce earnings persistence”. Burgstahler et al. (2002) show that the average effect of special items on expected future earnings is much different from the average effect of aggregate earnings. In contrast to the persistent elements of aggregate earnings, special items are more transitory than the remaining components of earnings. However, their results also reveal significant differences between the effects of positive special items and negative special items on future earnings. Positive special items are less than completely transitory in the sense that positive special items are followed on average by a smaller but nonzero amount of earnings of the same sign in subsequent quarters. Negative special items, on the other hand, are followed by earnings of the opposite sign in subsequent quarters. This suggests that special items, at least in part, cause the difference in conditional conservatism between loss firms and profit firms. The results in this chapter indicate that the difference in conditional conservatism between profit firms and loss firms is done largely through special items. Special items have a positive relation with cash flows. Special items are also more negative for loss firms than for profit firms. Loss firms use special items for conditional conservatism, resulting in an even more positive relation between cash flows and special items. Profit firms in contrast use special items to reduce the noise of transitory cash flows caused by an economic loss.

My analysis makes several contributions. First, the research furthers the knowledge of the function of accounting accruals, which occupy a central position in financial reporting. Dechow (1994) shows that accruals mitigate transitory variation in cash flows, while Ball and Shivakumar (2006) state that accruals are also used for timely loss recognition. My results indicate that there is a difference in the manner in which profit firms and loss firms use accruals to reflect an economic loss. Profit firms use accruals to ameliorate the transitory variation, or noise, in cash flow caused by an economic loss, while loss firms use accruals to reflect the downward revision in future cash flows in current earnings. Also, it is essential to have a better understanding of loss firms, since loss firms constitute a growing number of firm-year observations, growing from about 15 percent of the U.S. firm-year observations during the 1970s to about 35 percent of the U.S. firm-year observations by the 1990s (Joos and Plesko, 2005).

Second, my results further the insights in the use of special items accruals. Callen et al. (2006) state that accounting conservatism is mainly facilitated by the special item accruals. I show that there is a difference between profit firms and loss firms in the use of special items to facilitate conditional conservatism. Differences in information asymmetry result in special items being used for conditional conservatism primarily by loss firms, and not by profit firms.

Finally, my research extends the earnings management literature. I present evidence against the earnings management hypothesis that is presented in prior research. I argue that accrual choices that previously may have been considered earnings management in fact

represent the application of conditional conservatism, or timely loss recognition. For instance, McVay (2006) argues that managers opportunistically shift expenses from core expenses (cost of goods sold and selling, general, and administrative expenses) to special items, since this vertical movement of expenses does not change bottom-line earnings, but overstates "core" earnings. I show that the shifting to special items could in fact reflect timely loss recognition, where special items are used to effect conditional conservatism, rather than earnings management. Also, some studies use measures of accrual volatility and earnings volatility to measure earnings management (e.g. Leuz et al, 2003). However, the results in this chapter show that higher accrual volatility and higher earnings volatility can also reflect managers' information on the revision of future expected cash flows, as the use of accruals for timely loss recognition increase the positive relation between cash flows and accruals, and thus increase earnings volatility.

The remainder of the chapter is as follows. Paragraph 8.2 develops the hypotheses in this chapter. Paragraph 8.3 describes the data and methodology employed in this research. Paragraph 8.4 discusses the results of my analysis. Paragraph 8.5 discusses the robustness checks of the empirical examination. Paragraph 8.6 concludes.

8.2 Hypothesis development

Timeliness of loss recognition is a summary indicator of the speed with which adverse economic events are reflected in both the income statement and the balance sheet.

Assuming "clean surplus" accounting and ignoring offsetting changes such as reclassifications, all changes in the balance sheet flow through the income statement. Therefore, accounting income is the main indicator of financial reporting.

Accounting income consists of the cash flow generated by the operations of a firm, and accruals adjustments on cash flow from operations based on expectations of future cash flows. Accrual adjustments are made to mitigate timing and matching problems with cash flows, and are based on the revenue recognition principle and the matching principle.

Accounting income differs from economic income, which can broadly be defined as the change of the market value of equity, adjusted for dividends and capital contributions (Ball and Shivakumar, 2005). Economic income incorporates both current period cash flows and any revision in the present value of expected future cash flows. The economic gain or loss during a period can be thought of as the current-period cash flow plus or minus any upward or downward revision in the present value of expected future cash flows.

Accounting recognizes (economic) income under two broad models: deferred and timely recognition. Deferred recognition largely ignores revisions in expectations and awaits the realization of the revised cash flows themselves (realization principle).

Timely recognition incorporates unrealized losses in income (and hence the balance sheet) on an accrued basis, for example as inventory write-downs or as restructuring charges or asset impairment charges. By definition, timely loss recognition must occur around the time of revisions in expectations of future cash flows. This normally will be prior to the actual realization of those losses in cash, so timely recognition generally requires accounting accruals.

The economic gain or loss during a period can be thought of as the current-period cash flow plus or minus any upward or downward revision in the present value of expected future cash flows. Timely recognition of gains and losses must be accomplished at least in part through accounting accruals, because it is based in part on revisions of cash flow expectations made prior to their actual realization. Examples of timely recognition involving working capital assets and liabilities include gains and losses on trading securities, inventory write-downs due to factors such as spoilage, obsolescence or declines in market value, receivables revaluations, and provisions for operating costs arising from adverse events in the current period. Examples of timely recognition of losses involving long term assets and liabilities include restructuring charges arising from attending to failed strategies or excessive headcounts, goodwill impairment charges arising from negative-NPV acquisitions, and asset impairment charges arising from negative-NPV investments in long term assets (Ball and Shivakumar, 2006).

This role of accrual accounting has important implications for the interpretation of accruals. For example, Ball and Shivakumar (2005) argue that timely loss recognition increases the usefulness of financial reporting, but that it also increases the volatility of accruals (and of earnings as well as analysts' earnings forecast errors), which the literature generally has taken to indicate lower reporting quality.

Timely loss recognition has the opposite effect of the noise mitigating role discussed by Dechow (1994). It increases the variance of earnings conditional on the variance of periodic cash flows, by including capitalized losses in earnings. By increasing the volatility of accruals, and of earnings relative to cash flows, timely loss recognition could be mistaken for poor earnings quality (e.g., Leuz et al., 2003; Graham et al., 2005), whereas it could be argued that timely recognition of losses through accounting accruals actually improves reporting quality (see Basu, 1997, Ball et al., 2000 and Ball and Shivakumar, 2005).

A primary reason for asymmetric accounting recognition is that managers have an asymmetric incentive to reveal their private information. Ball and Shivakumar (2005, 2006) focus on timely loss recognition, because financial reporting normally modifies the revenue

recognition rules by adopting a lower verification standard for information about decreases in expected future cash flows (i.e., economic losses) than for increases (i.e., economic gains). Timeliness of economic loss incorporation is an important attribute of earnings quality because it makes financial statements more useful in several contexts, for example in corporate governance and loan agreements. Other reasons for focusing on losses, provided by Ball and Shivakumar (2005), are lower demand for timely gain recognition, and empirical evidence that timely gain recognition is not a high priority in accounting (Basu, 1997; Ball et al., 2000).

Beaver et al. (2005) provide evidence on the role of conservatism on the income distribution for profit firms and for loss firms. They report that the magnitude and frequency of negative special items are higher for loss firms than for profit firms. Beaver et al. (2005) conclude that the distribution of net income is not a single continuous distribution, but rather a mixture of two underlying distributions for profit firms and loss firms. This finding suggests that the timely loss recognition role of accruals may differ for profit firms and loss firms.

Prior research highlights the incentive for managers to recognize economic losses when firms have accounting losses, but not when firms have accounting profits. Hayn (1995) shows that investors value reported losses differently than reported profits. Hayn (1995) posits that reported losses are perceived by investors as temporary. They are thus more weakly associated with returns than profits.⁶⁷ Losses are likely to be considered temporary since shareholders can always liquidate the firm rather than suffer from indefinite losses. As a result, investors do not price losses into the stock price. Recognizing an economic loss when a firm has an accounting loss therefore highlights the transitory nature of the economic loss. In contrast, for firms with an accounting profit, recognizing an economic loss is considered permanent, and is reflected in lower returns for the stock.

Hypothesis 8.1 concerns the use of accruals to reflect economic losses for firms with actual accounting losses. Since managers want to accentuate the transitory nature of losses, knowing that investors price economic losses only for firms with an accounting profit (Hayn, 1995), it can be expected that firms that have an actual accounting loss are more likely to use accounting accruals for conditional conservatism. Ball and Shivakumar (2005; 2006) did not examine this specification. Therefore, in this study, I examine differences in timely loss recognition using accruals for profit firms versus loss firms. I expect on average, that loss firms use accruals to reflect a loss more than profit firms. The first hypothesis is:

⁶⁷ Hayn (1995) shows that for a loss, the earnings response coefficient (ERC) is not different from zero. In contrast, for a profit firms, the predicted value of the ERC is expected to be $1 + 1/r$ where r is the discount rate used by investors.

H8.1: Accruals are used by loss firms for conditional conservatism. In contrast, profit firms do not use accruals for conditional conservatism

Callen and Segal (2004) examine the manner in which accruals news relative to other factors, such as cash flow news and expected return news explain the total variance in current unexpected equity return changes. They show that accrual earnings news is as value relevant as cash flow earnings news in driving stock returns.⁶⁸ Callen et al. (2006) argue that special items are one of the main accrual items through which conservatism is facilitated.⁶⁹ They show that the asymmetric properties of conservative accounting generate a nonlinear relation between the unexpected revision in equity returns and earnings news. More specifically, their analysis implies that the GAAP treatment of special items generates a nonlinear and discontinuous relation between unexpected revisions in equity returns and special items.

In prior research, Elliott and Hanna (1996) investigate the information content of earnings in the presence of large nonrecurring or unusual charges. They find that the valuation weight, i.e. the earnings response coefficient (ERC), on earnings, before special items declines significantly in quarters following the recognition of large special items. ERCs decline even further if subsequent special items are reported. They also document that the ERC on special items is lower than the ERC on earnings before special items, consistent with the notion that special items are more transitory than other components of earnings, and that the ERC on special items declines with the frequency of reported special items.

⁶⁸ Their analysis is based on the Feltham-Ohlson (1995; 1996) framework. Accruals in the Feltham-Ohlson framework are defined as the change in the firm's operating assets. In addition to direct (dis)investment in operating assets, operating assets in the Feltham-Ohlson framework increase (decrease) whenever operating earnings are greater (less) than the firm's free cash flows. Defining accruals in this fashion, Feltham and Ohlson (1995) show that an incremental dollar of accruals should theoretically have a more favorable impact on future earnings than an incremental dollar of cash flows since operating assets generate (ex ante) returns above the risk-free rate whereas invested cash flows yield the risk-free rate only (Callen and Segal, 2004).

⁶⁹ Traditionally, for research using US data, special items comprise non-recurring items identified by Compustat from the income statement and the accompanying footnotes. The composition of the Compustat data item "special items" is not determined by a formal definition specified in GAAP, but rather by Compustat's own definition. Professional standards influence, but do not completely determine, the composition of special items because (1) components of earnings reported separately on the income statement are frequently, but not always, included in the Compustat data item "Special Items" and (2) the Compustat data item "Special Items" sometimes includes items reported in the footnotes but not shown separately on the income statement. Similarly, management discretion with respect to which items are reported separately in the financial statements and what information is reported in the footnotes influences the composition of special items. Compustat special items (data item #17) includes significant nonrecurring items, such as current year results of discontinued operations, natural disaster losses, and nonrecurring profit or loss on the sale of assets, investments and securities. Note that the definition of special items excludes the three major classes of transactions reported separately from income from continuing operations and shown net of tax under GAAP: (1) disposals of a segment of a business that meet the criteria specified in APB 30, (2) extraordinary items and (3) cumulative effects of changes in accounting principles (see also Burgstahler, et al. (2002).

Francis et al. (1996) examine whether managerial manipulation or economic impairment drives write-off decisions and whether the market reacts differently in the two cases. They find that proxies for both manipulation and impairment are significantly related to the write-off decision, and on average, investors react negatively to write-offs. However, they document significant positive reactions to restructuring charges.

Fairfield et al. (1996) document that disaggregating earnings into operating earnings, non-operating earnings, and special items improves forecasts of return-on-equity. Their results suggest that, although special items can result either from proper application of GAAP (e.g., a write-down of impaired assets) or from earnings management (e.g., big bath accounting that artificially improves future reported profitability), separate disclosure of special items may improve the usefulness of financial reports (also see Callen et al., 2006).

Burgstahler et al. (2002) examine if investors price the information in earnings components, including special items. They document that, consistent with previous research, special items are more transitory than other earnings components. They find that equity prices do reflect relatively more of the effects of special items compared to other earnings components, consistent with special items being largely transitory in nature. However, they also find that equity prices do not fully impound the implications of special items for future earnings.

They also find significant differences between positive special items and negative special items. Positive special items are less than completely transitory in that they are followed by a smaller but nonzero amount of earnings of the same sign in subsequent quarters. Negative special items, on the other hand, are followed by earnings of the opposite sign in subsequent quarters. This is consistent with the conjecture that negative special items sometimes represent a shift of expenses from future periods into the current period (through, for example, restructuring charges) that reduce current income but increase future income.

Burgstahler et al. (2002) differentiate special items between transitory prototypes and inter-period transfer prototypes. The transitory prototype represents a temporary effect where none of the earnings innovation carries over to subsequent quarters. For the inter-period transfer prototype, the earnings innovation has no effect on cumulative earnings but rather represents a reallocation of income among quarters so that the earnings innovation in period t is exactly matched by offsetting earnings innovations in subsequent periods. An example of a prototypical inter-period transfer is a restructuring charge recognized in period t that represents immediate recognition of costs more properly expensed in periods $t+1$, $t+2$, and subsequent periods. They show that the characteristics of special items are empirically related to their sign: positive special items on average are best described by the transitory prototype while negative special items are best described by the inter-period transfer prototype.

The second hypothesis deals with the role of special items in explaining the difference in conditional conservatism using accruals between profit firms and loss firms. Beaver et al. (2005) findings suggest that the discontinuity at zero in the distribution of earnings is at least partly explained by the asymmetric effects of special items for profit firms and loss firms. They show that the magnitude and frequency of negative special items are higher for loss firms than for profit firms. Therefore, I hypothesize that the difference in conditional conservatism is caused by special items. The second hypothesis is:

H8.2: The difference in the role of accruals for conditional conservatism between profit firms and loss firms is caused by the use of special items

8.3 Research Methodology

Figure 8.1 illustrates the classification of firms with timely loss recognition into profit firms and loss firms.

<i>Group AP:</i> Profit firms Net Income Before Extraordinary items ≥ 0		<i>Group AL:</i> Loss firms Net Income Before Extraordinary items < 0	
<i>Group APEG:</i> Economic gain	<i>Group APEL:</i> Economic loss $\Delta\text{CFO} < 0,$ $\text{ABNRET} < 0$ or $\text{CFO} < 0$	<i>Group ALEG:</i> Economic gain	<i>Group ALEL:</i> Economic loss $\Delta\text{CFO} < 0,$ $\text{ABNRET} < 0$ or $\text{CFO} < 0$

Figure 8.1 Grouping of firms with accounting profits and accounting losses

Group AP: firms with an accounting profit;
 Group AL: firms with an accounting loss;
 Group APEG: firms with an accounting profit and an economic gain;
 Group APEL: firms with an accounting profit and an economic loss;
 Group ALEG: firms with an accounting profit and an economic gain;
 Group ALEL: firms with an accounting profit and an economic loss;
 CFO: cash flow from operations;
 ABNRET: stock return in fiscal year minus market return in fiscal year;

The research question in this chapter is whether the role of accruals differs for the APEL group and the ALEL group. Ball and Shivakumar (2006) suggest that there is no difference in the role of accruals for APEL and APEG, however, I hypothesize that there is a difference, and this difference is caused by the difference in special items for APEL and APEG.

The empirical tests employ data obtained from the Center for Research in Security prices (CRSP) and Compustat annual industrial and research files. Accruals are estimated from cash flow statement, as Hribar and Collins (2002) point out that the use of balance sheet data can introduce errors into the measurement of accruals. This restricts the sample to the 1987–2001 period. Consistent with the prior literature, the 1% of extreme values of the distribution are excluded for all variables. All variables are deflated by average total assets. Excluded from the sample are financial firms (SIC codes 6000-6999) and firms without complete data. Also excluded are firms with negative book value.

I use the method of Ball and Shivakumar (2005; 2006) to examine the difference in timely loss recognition, or conditional conservatism, for profit firms and loss firms. In this model, accruals are a piecewise linear model of cash flows, where the change in cash flows is a proxy for profits or losses. The economic loss during a period can be thought of as the current-period cash flow minus a downward revision in the present value of expected future cash flows. The proxy for an economic loss is either non-market (book) based or market based. The non-market based proxy for an economic loss is a negative change in cash from operations (ΔCFO). The change specification is the correct specification for the tests of the difference in timely loss recognition between firms with an accounting profit and firms with an accounting loss, as the tests are less likely to be affected by a selection bias.⁷⁰ The market based proxy for an economic loss is a negative change in market value, i.e. a negative abnormal return (ABNRET). The negative change in these proxies indicates that future cash flows are likely to be lower than previous anticipated, i.e. a downward revision in the present value of expected future cash flows. Profit firms and loss firms are determined by net income before extraordinary items (Compustat data item #123).

⁷⁰ More specifically, for accounting profit firms, firms with negative cash flow from operations have positive accruals by default. Conversely, for loss firms with a positive cash flow from operations, accruals are negative by default. When using the level of cash flow for as a proxy for economic losses, selecting on the dependent variable in the model may cause biased test statistics. I am grateful to Peter Easton for bringing this to my attention.

Profit firms are firms with net income before extraordinary items ≥ 0 , loss firms are firms with net income before extraordinary items < 0 . I run pooled regressions with White (1980) adjusted standard errors of the following models:⁷¹

$$Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * \Delta CFO + \beta_3 * D_ \Delta CFO_t + \beta_4 * D_ \Delta CFO_t * \Delta CFO_t + \beta_5 * D_ Loss_t + \beta_6 * D_ Loss_t * D_ \Delta CFO_t + \beta_7 * D_ Loss_t * \Delta CFO_t + \beta_8 * D_ Loss_t * D_ \Delta CFO_t * \Delta CFO_t + \varepsilon_t$$

(8.1)

$$Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * ABNRET_t + \beta_3 * D_ ABNRET_t + \beta_4 * D_ ABNRET_t * ABNRET_t + \beta_5 * D_ Loss_t + \beta_6 * D_ Loss_t * ABNRET_t + \beta_7 * D_ D_ Loss_t * ABNRET_t * ABNRET_t + \varepsilon_t$$

(8.2)

where:

$Acc_{t,b}$ = total accruals. Accruals are defined as net income before extraordinary items, taken from the cash flow statement (Compustat item #123) minus cash flow from operations, also taken from the cash flow statement (Compustat item #308);

CFO_t = cash from operations, taken from the cash flow statement (Compustat #308) in year t;

$D_ Loss_t$ = Dummy variable that takes the value of 1 if net income < 0 , indicating an accounting loss, where net income is defined as net income before extraordinary items, taken from the cash flow statement (Compustat item #123), 0 otherwise;

$D_ \Delta CFO_t$ = Dummy variable that takes the value of 1 if $\Delta CFO < 0$, indicating an economic loss, 0 otherwise;

$ABNRET_t$ = abnormal return, where the abnormal return is the stock return in fiscal year t minus the market return in year t. The market return is the CRSP equally weighted market return in year t;

$D_ ABNRET_t$ = Dummy variable that takes the value of 1 if $ABNRET_t < 0$, indicating an economic loss, 0 otherwise.

To examine hypothesis 2, which states that the difference in the role of accruals for conditional conservatism between profit firms and loss firms is caused by the use of special

⁷¹ The use of interaction dummy variables may cause concerns of collinearity, since the independent variable ΔCFO is highly correlated to the interaction terms $D_ Loss$ and $D_ \Delta CFO$. However, this is not an issue that affects the tenure of the results on this model, as the addition of the interaction terms increases the standard error of the coefficient on ΔCFO . This does not affect the interpretation of the interaction terms, which are examined in this model.

items, I examine the relation between special items and cash flow. Special items represent a class of accruals. Accruals are generally used to reduce noise in cash flow, resulting in a negative relation between contemporaneous cash flow and accruals. However, accruals can also be used for conditional conservatism, causing a positive relation between contemporaneous cash flow and accruals. To test the relation between cash flows and special items, I run the accrual model specifically for special items. In this examination, I investigate if there is a difference in timely loss recognition using special items for profit firms and loss firms. I run pooled regressions with White (1980) adjusted standard errors of the following model:

$$\begin{aligned} \text{Special_Items}_t = & \beta_0 + \beta_1 * \text{CFO}_t + \beta_2 * \text{D_CFO}_t + \beta_3 * \text{D_CFO}_t * \text{CFO}_t + \beta_4 * \text{D_Loss}_t \\ & + \beta_5 * \text{D_Loss}_t * \text{D_CFO}_t + \beta_6 * \text{D_Loss}_t * \text{CFO}_t + \beta_7 * \text{D_Loss}_t * \text{D_CFO}_t * \text{CFO}_t + \varepsilon_t \end{aligned} \quad (8.3)$$

Where:

Special_Items_t = Compustat data item # 17, and all other variables as above.

In this specification, I examine if special items have a negative relation with cash flows, which suggest that special items are used to reduce the noise in transitory cash flows (e.g. Dechow, 1994) or if special items have a positive relation with cash flow, which suggest that special items are used to reflect unrealized gains or losses in the income statement (e.g. Ball and Shivakumar, 2006). Furthermore, I examine the timely recognition of economic losses via special items, and more specifically the difference between profit firms and loss firms in timely loss recognition using special items.

8.4 Results

8.4.1 Descriptive Statistics

Table 1 provides descriptive statistics on the variables. Total accruals are negative on average (-0,053), as are special items (-0,011). The median value of special items is zero. This reflects the “special” nature of special items, that is, special items are on average not part of normal operations. It should be noted that on average, total accruals are more volatile than special items. The correlations in Table 2 illustrate the relations between the sample variables. As expected, there is a negative contemporaneous relation between cash flows and total accruals, with a Pearson correlation coefficient of -0.29. However, there is a positive relation between contemporaneous cash flow and special items, with a Pearson correlation coefficient of 0.11. This indicates that special items do not reduce the noise in cash flows to produce earnings, but rather make earnings more noisy estimates of firm performance. The positive relation between cash flow and special items suggest that special items could play a major role in

timely loss recognition, as Ball and Shivakumar (2006) show that timely loss recognition induces a positive relation between cash flows and accruals. This is further investigated in the next section of this chapter.

Table 8.1 Descriptive Statistics for Firm-Year Observations

	Mean	Standard Deviation	Lower Quartile	Median	Upper Quartile
Total Accruals	-0,053	0,099	-0,091	-0,047	-0,006
Special Items	-0,011	0,055	-0,006	0,000	0,000
Cash from operations	0,068	0,110	0,024	0,079	0,130

N= 41,382; Variables Measurement: Total Accruals= net income before extraordinary items, taken from the cash flow statement (Compustat item #123) minus cash flow from operations, also taken from the cash flow statement (Compustat item #308); Special Items_{*p,t*}= Compustat item #17; All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

Table 8.2 Correlations of variables

Pearson (Spearman) Correlation Coefficients in the Lower (Upper) Diagonal (*p*- values shown in parentheses below correlations)

	Total Accruals	CFO	Special Items
Total Accruals	-	-0.4486 (0.0000)	0.2731 (0.0000)
CFO	-0.2901 (0.0000)	-	0.0768 (0.0000)
Special Items	0.5278 (0.0000)	0.1056 (0.0000)	-

Table 8.1 provides the definitions for all variables.

8.4.2 Test of H8.1: Accruals are used by accounting loss firms for conditional conservatism. In contrast, profit firms do not use accruals for conditional conservatism

The first hypothesis concerns the difference in the use of accruals for conditional conservatism between firms with an accounting profit and firms with an accounting loss. First, in table 8.3, I replicate the results of Ball and Shivakumar (2006) regarding the role of accruals for the timely recognition of unrealized losses. Table 8.3 reports results of pooled regressions with White (1980) standard errors of equation (8.1). Regression I is the standard accrual model without the piece-wise linear specification for timely loss recognition. The coefficient on current cash flow CFO_t is -0.186 with a t-stat of -19.36, while the coefficient on ΔCFO_t is -0.244, with a t-stat of -27.33. Regression II features the addition of the

piecewise specification for the timely recognition of unrealized losses by accruals, consistent with Ball and Shivakumar (2006). The coefficient on ΔCFO_t is -0.309 with a t-stat of -22.73. The incremental coefficient on the change in current cash flow $D_{\Delta CFO_t} * \Delta CFO_t$ for firms with an economic loss, as indicated by a negative change in cash flow, is positive, as predicted by Ball and Shivakumar (2006), with a value of 0.203 and a t-stat of 8.27. The total coefficient on ΔCFO_t for economic loss firms is -0.106 (-0.309 + 0.203), indicating that firms with an economic loss offset 11% of negative cash flows with accruals. This means that the noise reducing role of accruals for economic loss firms is 66% lower than non-economic loss firms. This model offers a marginal improvement in specification, as the explanatory power improves from 0.14 to 0.15 from the regression of hypothesis I. This improvement can be explained by the addition of the piecewise specification for the timely recognition of unrealized losses by accruals, consistent with Ball and Shivakumar (2006).

In regression III, the incremental loss function is examined separately for loss firms and profit firms. Hypothesis 8.1 predicts that only firms with an accounting loss use accruals for asymmetric loss recognition. As a result, in regression III the incremental loss coefficient $D_{\Delta CFO_t} * \Delta CFO_t$ for firms with an accounting profit is predicted to be negative, while the incremental loss coefficient $D_{Loss_t} * D_{\Delta CFO_t} * \Delta CFO_t$ for firms with an accounting loss is predicted to be positive. The results of regression III in table 8.3 are consistent with hypothesis 8.1. The coefficient on ΔCFO_t for firms with an accounting profit without economic losses is -0.106 with a t-stat of -12.55. For firms with an accounting loss, the coefficient $D_{Loss_t} * D_{\Delta CFO_t}$ is also negative, with a value of -0.158 and a t-stat of -5.50, indicating that there is no difference in direction of the noise reducing role of accruals between firms with an accounting profit and firms with an accounting loss. However, when examining the asymmetric loss function of accruals, there is a difference between firms with an accounting profit and firms with an accounting loss. The incremental coefficient on the change in current cash flow $D_{\Delta CFO_t} * \Delta CFO_t$ for firms with an accounting profit and an economic loss is negative, with a value of -0.241 and a t-stat of -18.88. This is inconsistent with Ball and Shivakumar (2006), and shows that accounting profit firms do not use accruals for asymmetric loss recognition. In fact, the results suggest that for firms with an accounting profit, accounting accruals play an even bigger role in reducing the noise in cash flows when there is an economic loss. The total coefficient on ΔCFO_t for economic loss firms with an accounting profit is -0.347 (-0.106 - 0.241). In contrast, for firms with an accounting loss, the results indicate that accruals are used for the timely recognition of economic losses. The incremental loss coefficient $D_{Loss_t} * D_{\Delta CFO_t} * \Delta CFO_t$ for firms with an accounting loss is positive as predicted, with a value of 0.699 and a t-stat of 15.24, consistent with Ball and Shivakumar (2006). The total coefficient on ΔCFO_t for economic loss firms with an accounting loss is positive, at 0.194 (-0.106 - 0.241 + 0.699) suggesting that there is

positive relation between changes in cash flow for operations and accruals for accounting loss firms with an economic loss. This model offers a large improvement in specification, as the explanatory power improves from 0.15 to 0.45 from the regression II. Thus, the results indicate that the role of accruals for the timely recognition of economic losses seems to be restricted to firms with an accounting loss. This could be the result of loss firms having bigger information asymmetries which are resolved by more efficient contracting, or because profit firms do not have an incentive to recognize economic losses on a timely basis.

Table 8.3 Coefficients and t-statistics for coefficients from regressions of Total Accruals on Cash Flow from Operations. The proxy for an economic loss is $\Delta CFO_t < 0$

$$\text{Equation 8.1: } Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * \Delta CFO_t + \beta_3 * D_ \Delta CFO_t + \beta_4 * D_ \Delta CFO_t * \Delta CFO_t + \beta_5 * D_ Loss_t + \beta_6 * D_ Loss_t * D_ \Delta CFO_t + \beta_7 * D_ Loss_t * \Delta CFO_t + \beta_8 * D_ Loss_t * D_ \Delta CFO_t * \Delta CFO_t + \varepsilon_t$$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.04	-38.53	-0.036	-26.8	0.008	7.54
<i>CFO_t</i>	-	-0.186	-19.36	-0.204	-21.68	-0.489	-51.30
<i>ΔCFO_t</i>	-	-0.244	-27.33	-0.309	-22.73	-0.106	-12.55
<i>D_ΔCFO_t</i>	?			0.008	4.96	-0.001	-0.74
<i>D_ΔCFO_t*ΔCFO_t</i>	-			0.203	8.27	-0.241	-18.88
<i>D_Loss_t</i>	?					-0.117	-41.09
<i>D_Loss_t*ΔCFO_t</i>	?					-0.158	-5.50
<i>D_Loss_t*D_ΔCFO_t</i>	?					0.016	3.66
<i>D_Loss_t*D_ΔCFO_t*ΔCFO_t</i>	+					0.699	15.24
<i>Adj R²</i>		0.14		0.15		0.45	
<i>No of obs</i>		33584		33584		33584	

Variables Measurement: CFO_t = Cash Flow from Operations (Compustat item #308); Acc_t = Total Accruals= Net income before Extraordinary Items (Compustat data # 123) - Cash Flow from Operations (Compustat item #308); $D_ \Delta CFO_t$ = Dummy variable that takes the value of 1 if $\Delta CFO < 0$, indicating an economic loss for regression II; $D_ Loss_t$ = Dummy variable that takes the value of 1 if Net income before Extraordinary Items < 0 (Compustat data #123), indicating an accounting loss in regression III. All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

Table 8.4 examines the difference in timely economic loss recognition between firms with an accounting profit and firms with an accounting loss using market-adjusted return $ABNRET_t$ as a proxy for economic losses, as in Basu (1997) and Ball and Shivakumar (2006). The results in table 8.4 using a market based proxy for economic losses are consistent with the inferences in table 8.3 using a non-market based proxy for economic losses. Regression I and regression II in table 8.4 show that, consistent with the results in Ball and Shivakumar (2006), only the firm-years with negative abnormal market returns contain significant information about accruals. For positive abnormal returns, the coefficient on $ABNRET_t$ is economically small at -0.010 . The coefficient on economic loss $D_ ABNRET_t * ABNRET_t$ is positive and significant at 0.043 , consistent with Ball and Shivakumar (2006). However, the results in regression III show that for only firms with an accounting loss negative abnormal market returns contain

significant information about accruals. The coefficient $D_Loss_t * D_ABNRET_t * ABNRET_t$ for firms with an accounting loss is positive and significant at 0.080, while the coefficient $D_ABNRET_t * ABNRET_t$ for firms with an accounting profit is -0.018 is economically small. The market-based proxy confirms the conclusion reached from using the book-based proxy, that the asymmetric loss recognition role of accruals is restricted to firms with an accounting loss.

Table 8.4 Coefficients and t-statistics for coefficients from regressions of Total Accruals on Cash Flow from Operations. The proxy for an economic loss is $ABNRET_t < 0$

Equation 8.2: $Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * ABNRET_t + \beta_3 * D_ABNRET_t + \beta_4 * D_ABNRET_t * ABNRET_t + \beta_5 * D_Loss_t + \beta_6 * D_Loss_t * ABNRET_t + \beta_7 * D_D_Loss_t * ABNRET_t * ABNRET_t + \varepsilon_t$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.028	-30.24	-0.022	-16.87	0.021	-20.35
<i>CFO_t</i>	+	-0.294	-34.81	-0.308	-36.02	-0.552	-64.85
<i>ABNRET_t</i>	-	-0.005	-5.67	-0.010	-7.79	0.000	-0.69
<i>D_ABNRET_t</i>	+			0.006	4.55	-0.002	-3.05
<i>D_ABNRET_t * ABNRET_t</i>	+			0.043	12.89	-0.018	-9.87
<i>D_Loss_t</i>	+					-0.130	-50.49
<i>D_Loss_t * ABNRET_t</i>	?					-0.008	-4.05
<i>D_Loss_t * D_ABNRET_t</i>	+					0.016	3.83
<i>D_Loss_t * D_ABNRET_t * ABNRET_t</i>						0.080	10.46
<i>Adj R²</i>		0.114		0.121		0.43	
<i>No of obs</i>		35865		35865		35865	

Variables Measurement: CFO_t = Cash Flow from Operations (Compustat item #308); Acc_t = Total Accruals = Net income before Extraordinary Items (Compustat data # 123) - Cash Flow from Operations (Compustat item #308); $ABNRET_t = RET_t - MKRET_t$. RET_t is the annual return measured over the fiscal year. $MKTRET_t$ is the Center for Research in Security Prices equally weighted market return measured over the same period as RET_t . D_ABNRET_t = Dummy variable that takes the value of 1 if $ABNRET_t < 0$, indicating an economic loss for regression II; D_Loss_t = Dummy variable that takes the value of 1 if Net income before Extraordinary Items < 0 (Compustat data #123), indicating an accounting loss in regression III. All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

The results show that there is a difference in the way accruals are used for the recognition of unrealized losses for profit firms and loss firms. For profit firms, timely loss recognition actually improves the noise reduction role of accruals, contrary to the results of Ball and Shivakumar (2006). For firms with an accounting loss however, the noise reduction role of accruals is less prevalent, consistent with previous research. My results also suggest that for loss firms, measures of earnings quality that examine the volatility of accruals and earnings relative to cash flows could mistake timely loss recognition for poor earnings quality (e.g., Leuz et al., 2003; Graham et al., 2005), since it could be argued that timely recognition of losses through accounting accruals actually improves reporting quality (see Basu, 1997; Ball et al., 2000; Ball and Shivakumar, 2005).

8.4.3 Test of H8.2: The difference in the role of accruals for timely loss recognition between profit firms and loss firms is caused by the use of special items

The results of hypothesis 1 indicate that there is a difference in the timely loss recognition role of accruals for profit firms and loss firms. The second hypothesis states that this difference is caused by the difference in special items for profit firms and loss firms. To examine hypothesis 8.2, I examine the relation between special items and cash flow. Special items is a class of accruals, and one of the major functions of accruals is to ameliorate transitory shocks in cash flow. As a result, there is a negative relation between accruals and cash flow. However, accruals are also used for the timely recognition of unrealized losses. This role of accruals results in a positive relation between accruals and cash flow. In this test, I examine the relation between special items and cash flow. First, table 5 provides descriptive statistics on the special items, conditional on an accounting profit or accounting loss and conditional on an economic profit or economic loss.

Table 8.5 Descriptive Statistics of Special Items, conditional on accounting and economic profits or losses

	n	Mean	Median	Standard Deviation
Special Items	42203	-0.011	0.000	0.055
Special Items for firms with an Accounting Profit	31482	0.000	0.000	0.027
Special Items for firms with an Accounting Loss	10674	-0.043	-0.006	0.092
Special Items for firms with an Economic Loss	16158	-0.012	0.000	0.056
Special Items if Economic Loss & Accounting Profit	11892	-0.001	0.000	0.028
Special Items if Economic Loss & Accounting Loss	4264	-0.045	-0.010	0.091

Variables Measurement: Special Items_{*it*} = Compustat item #17; Accounting profit firms are all firms with Net income before Extraordinary Items ≥ 0 (Compustat data #123); Accounting loss firms are all firms with Net income before Extraordinary Items < 0 (Compustat data #123). Economic loss is all firms with $\Delta\text{CFO} < 0$ (Compustat data#308). All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

As presented in table 8.5, special items are negative on average for all firms, with a value of -0.011. However, when partitioning the sample on accounting profit firms and accounting loss firms, the descriptive statistics reveal that special items are zero (0.000) on average for accounting profit firms, in contrast to firms with an accounting loss, which have more negative special items than average, with a mean value of -0.043. Also note that the volatility of special times is almost twice as large for the accounting loss firms sample than for the entire sample of firms, and only half the volatility for the profit firm sample compared to the entire sample for firms. This indicates that loss firms use special items differently than profit firms.

The descriptive statistics also reveal that firms with an economic loss have on average negative special items with the same magnitude as the total sample of firms (-0.012). However, when partitioning economic loss firms on accounting profits and losses, the descriptive statistics reveal that accounting profit firms still have zero special items on average, while accounting loss firms have negative special items (-0.045). It appears that the special items accrual is used to reflect an economic loss, when the firm has an accounting loss. However, for profit firms, special items are not used to reflect an economic loss. Table 8.6 shows the results of pooled regressions with White (1980) standard errors of the accrual model for one specific set of accruals, the special items. Regression I shows the basic model, regressions II and III show the basic model adjusted for the timely loss recognition role of accruals for firms with an accounting profit and firms with an accounting loss.

Table 8.6 Coefficients and t-statistics from regressions of Special items on Cash Flow from Operations. The proxy for an economic loss is $CFO_t < 0$

Equation 8.3:
$$Special_Items_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * D_CFO_t + \beta_3 * D_CFO_t * CFO_t + \beta_4 * D_Loss_t + \beta_5 * D_Loss_t * D_CFO_t + \beta_6 * D_Loss_t * CFO_t + \beta_7 * D_Loss_t * D_CFO_t * CFO_t + \varepsilon_t$$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.016	-30.88	-0.013	-24.51	0.000	-1.14
<i>CFO_t</i>	+	0.053	11.62	0.033	7.97	-0.013	-4.54
<i>D_CFO_t</i>	-			-0.003	-1.86	-0.035	-0.01
<i>D_CFO_t*CFO_t</i>	+			0.029	2.04	-0.192	-2.42
<i>D_Loss_t</i>	+					0.000	-17.76
<i>D_Loss_t*CFO_t</i>	+					-0.121	-7.52
<i>D_Loss_t*D_CFO_t</i>	?					-0.001	-0.32
<i>D_Loss_t*D_CFO_t*CFO_t</i>	+					0.347	5.98
<i>Adj R²</i>		0.01		0.01		0.13	
<i>No of obs</i>		39609		39609		39609	

Variables Measurement: *Special Items_t*= Compustat item #17; *CFO_t*= Cash Flow from Operations (Compustat item #308); *D_CFO_t*= Dummy variable that takes the value of 1 if $CFO_t < 0$, indicating a loss; *D_Loss_t*= Dummy variable that takes the value of 1 if Net income before Extraordinary Items < 0 (Compustat data #123), indicating an accounting loss. All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

The results in table 8.6 indicate that special items are used in a different manner than the total accruals measure used in hypothesis 8.1. If special items are used for timely loss recognition, the relation of special items and accruals should be opposite of the relation between total accruals and special items. The positive relation between special items and contemporaneous cash flows in table 8.6 confirms this. The value of the coefficient *CFO_t* is 0.053, with a t-value of 11.62. When this result is related to the coefficient for current cash flow *CFO_t* on total accruals of -0.186 in table 8.3, the different role of special items becomes apparent. Special items amplify the transitory shocks of cash flow in earnings, while total accruals

reduce the shocks of cash flow in earnings. The results for regression II show that this role of special items is accentuated when partitioning firms on the presence an economic loss. The coefficient on current cash flow CFO_t for firms without an economic loss is significantly positive at 0.033, while the incremental coefficient on current cash flow $D_CFO_t * CFO_t$ for firms with an economic loss, as indicated by a negative cash flow, is 0.029 with a t-stat of 2.04, indicating that special items are especially relevant for firms with an economic loss.

The results in regression III of table 8.6 highlight the difference in the way profit firms and loss firms use special items. For regression III in table 8.6, the coefficient on CFO_t for firms with an accounting profit without economic losses is -0.013 with a t-stat of -4.54, suggesting that special items are generally used to reduce the noise in cash flows. For firms with an accounting loss, the coefficient $D_Loss_t * D_ΔCFO_t$ is also negative, with a value of -0.121 and a t-stat of -7.52, indicating that there is no difference in direction of the noise reducing role of special items between firms with an accounting profit and firms with an accounting loss. However, when examining the asymmetric loss function of accruals, there is a difference between firms with an accounting profit and firms with an accounting loss. The incremental coefficient on current cash flow $D_CFO_t * CFO_t$ for firms with an accounting profit and an economic loss is negative, with a value of -0.192 and a t-stat of -2.42, suggesting that accounting profit firms do not use special items for asymmetric loss recognition. The total coefficient on CFO_t for economic loss firms with an accounting profit is -0.205 (-0.013 - 0.192). In contrast, for firms with an accounting loss, the results indicate that special items are used for the timely recognition of economic losses. The incremental loss coefficient $D_Loss_t * D_CFO_t * CFO_t$ for firms with an accounting loss is positive as predicted, with a value of 0.347 and a t-stat of 5.98. The total coefficient on CFO_t for economic loss firms with an accounting loss is positive, at 0.021 (-0.013 - 0.192 - 0.121 + 0.347) suggesting that there is positive relation between cash flow for operations and special items for accounting loss firms with an economic loss. Overall, the results in table 8.6, combined with the descriptive statistics in table 8.5 indicate that there is a difference in the manner in which profit firms and loss firms employ special items for the timely recognition of economic losses.

8.5 Robustness tests

8.5.1 Differential mean reversion in earnings changes

Accruals that are used for timely recognition of economic losses introduce a transitory element in income. As a result, changes in income that are the result of timely loss recognition have the tendency to reverse (Basu, 1997). If there is a difference in timely loss recognition of economic losses between firms with an accounting profit and firms with an accounting loss, the tendency of reversal of income changes as a result of timely loss

recognition of economic losses should also differ between firms with an accounting profit and firms with an accounting loss. I therefore test Basu's (1997) time-series measure of timely loss recognition for accounting loss and accounting profit firms to examine if my results are robust to this specification:

$$\Delta NI_{t+1} = \alpha_0 + \alpha_1 * \Delta NI_t + \alpha_2 * D_ \Delta NI_t + \alpha_3 * D_ \Delta NI_t * \Delta NI_t + \alpha_4 * D_ Loss_t + \alpha_5 * D_ Loss_t * \Delta NI_t + \alpha_6 * D_ \Delta NI_t * D_ Loss_t + \alpha_7 * D_ \Delta NI_t * D_ Loss_t * \Delta NI_t + \varepsilon_t \quad (8.4)$$

where ΔNI_{t+1} is the change in income (defined as net income before extraordinary items) from fiscal year t to t+1. $D_ \Delta NI_t$ is a dummy variable taking the value 1 if the prior-year change ΔNI_t is negative and $D_ Loss_t$ is a dummy variable that takes the value 1 for firms with the level of net income before extraordinary items < 0 .

Table 8.6 shows the results of pooled regressions with White (1980) standard errors of regression 8.4. Regressions I and II shows the Basu (1997) model, regressions III shows the model adjusted for timely loss recognition for firms with an accounting profit and firms with an accounting loss.

Table 8.7 Coefficients and t-statistics for coefficients from regressions of change in Earnings on lagged change in Earnings. The proxy for an economic loss is $\Delta NI_t < 0$

Equation 8.4: $\Delta NI_{t+1} = \alpha_0 + \alpha_1 * \Delta NI_t + \alpha_2 * D_ \Delta NI_t + \alpha_3 * D_ \Delta NI_t * \Delta NI_t + \alpha_4 * D_ Loss_t + \alpha_5 * D_ Loss_t * \Delta NI_t + \alpha_6 * D_ \Delta NI_t * D_ Loss_t + \alpha_7 * D_ \Delta NI_t * D_ Loss_t * \Delta NI_t + \varepsilon_t$

	Pred Sign	Regression I		Regression II		Regression II	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.005	-15.67	-0.006	-9.86	-0.006	-10.04
ΔNI_t	+	-0.355	-29.72	-0.169	-9.66	-0.220	-10.82
$D_ \Delta NI_t$?			-0.017	-19.21	-0.003	-3.67
$D_ \Delta NI_t * \Delta NI_t$	+			-0.461	-18.86	0.337	10.63
$D_ Loss_t$?					0.020	4.95
$D_ Loss_t * \Delta NI_t$	+					0.101	2.28
$D_ Loss_t * D_ \Delta NI_t$?					-0.028	-6.06
$D_ Loss_t * D_ \Delta NI_t * \Delta NI_t$	-					-0.900	-16.24
<i>Adj R²</i>		0.12		0.16		0.19	
<i>No of obs</i>		58819		58819		58819	

Variables Measurement: ΔNI_t = Net income before Extraordinary Items (Compustat data #123); $D_ \Delta NI_t$ = Dummy variable that takes the value of 1 if $\Delta NI_t < 0$, indicating an economic loss; $D_ Loss_t$ = Dummy variable that takes the value of 1 if Net income before Extraordinary Items < 0 (Compustat data #123), indicating an accounting loss. All variables are deflated by average total assets. For each variable, the extreme 1% is deleted on either side of the distribution.

The results of regression I in table 8.7 indicate that there is a reversal of income increases for all firms, with a value of the coefficient ΔNI_t of -0.355, and a t-stat of -29.72. However, in

regression II, the results show that, when partitioning on firms with an economic loss as proxied by a negative change in net income, the income increase reversal is smaller for firms without an economic loss, with a value of the coefficient ΔNI_t of -0.169 and a t-stat of -9.66, and more pronounced for firms with an economic loss, with a value of the coefficient $D_ \Delta NI_t * \Delta NI_t$ of -0.461 and a t-stat of -18.86. This evidence of timely recognition of economic losses as non-repeating transitory components of income is consistent with Basu (1997). In regression III of table 8.7, firms with an economic loss are partitioned in firms with an accounting profit and firms with an accounting loss. The results indicate that the timely recognition of economic losses is restricted to firms with an accounting loss. The value of the coefficient ΔNI_t for accounting profit firms without an economic loss is -0.220 and a t-stat of -10.82. However, for accounting profit firms with an economic loss, the incremental timely loss coefficient $D_ \Delta NI_t * \Delta NI_t$ is positive at 0.337, with a t-stat of 10.63, indicating that profit firms are less likely to incorporate transitory losses in income. In contrast, the incremental timely loss coefficient for firms with an accounting loss, $D_ Loss_t * D_ \Delta NI_t * \Delta NI_t$ is negative as predicted, with a value of the coefficient ΔNI_t of -0.900, and a t-stat of -16.24. Overall, the results in table 8.7 show that the results of the difference in timely loss recognition between firms with an accounting profit and firms with an accounting loss are robust to the earnings changes specification.

8.5.2 Accruals estimated from the balance sheet

Another issue of the study is the accrual measurement. Accruals are estimated from the cash flow statement, as Hribar and Collins (2002) point out that the use of balance sheet data can introduce errors into the measurement of accruals. This restricts the sample to the 1987–2001 period. Therefore, as a robustness test, I also run equation 8.1 using accruals and cash flow data estimated indirectly from balance sheet data, which extends the sample to the 1971-2001 period. Accruals are defined as follows:

Acc_t = total accruals. Accruals are calculated from the balance sheet as follows: $(\Delta CA_{j,t} - \Delta Cash_{j,t}) - (\Delta CL_{j,t} - \Delta STDebt_{j,t}) - DEPN_{j,t}$;

ΔCA_t = change in current assets (Compustat data item # 4);

$\Delta Cash_t$ = change in cash/cash (Compustat data item # 1);

ΔCL_t = change in current liabilities(Compustat data item # 5);

$\Delta STDebt_t$ = change in debt included in current liabilities (Compustat data item # 3);

$DEPN_t$ = depreciation and amortization expense (Compustat data item # 14);

CFO_t = cash from operations, and is calculated as $CFO_{j,t} = NI_{j,t} - TA_{j,t} \cdot NI_{j,t}$ is firm j's net income before extraordinary items (Compustat #18) in year t;

Table 8.8 reports the result of hypothesis 8.1 using cash flow statement data. The results in table 8.8 show that the results of hypothesis 8.1 are not affected by a different specification of accruals. In regression II of table 8.8, for all firms, the incremental coefficient on $D_CFO_t * CFO_t$ is positive at 0.192, with a t-stat of 18.41, similar to table 8.3. However, in regression III, for profit firms, the incremental coefficient on $D_CFO_t * CFO_t$ is negative, with a coefficient of -0.121 and a t-stat of -19.87, similar to results in table 8.3. Finally, for loss firms, the incremental coefficient on $D_LOSS_t * D_CFO_t * CFO_t$ is positive, with a coefficient of 0.473 and a t-stat of 24.96, again similar to results in table 8.3. Finally, the explanatory power of the model is much higher for the profit and loss firm specification, consistent with previous results.

Table 8.8 Coefficients and t-statistics for coefficients from regressions of Total Accruals from the balance sheet on Cash Flow from Operations. The proxy for an economic loss is $\Delta CFO_t < 0$

$$\text{Equation 8.1: } Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * \Delta CFO_t + \beta_3 * D_ \Delta CFO_t + \beta_4 * D_ \Delta CFO_t * \Delta CFO_t + \beta_5 * D_ Loss_t + \beta_6 * D_ Loss_t * D_ \Delta CFO_t + \beta_7 * D_ Loss_t * \Delta CFO_t + \beta_8 * D_ Loss_t * D_ \Delta CFO_t * \Delta CFO_t + \varepsilon_t$$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.037	-63.1	-0.035	-52.41	-0.004	-5.34
<i>CFO_t</i>	+	-0.176	-32.94	-0.201	-41.84	-0.415	-75.96
<i>ΔCFO_t</i>	-	-0.202	-53	-0.245	-41.76	-0.160	-29.91
<i>D_ΔCFO_t</i>	+			0.015	18.56	0.002	-5.09
<i>D_ΔCFO_t*ΔCFO_t</i>	+			0.192	18.41	-0.121	-19.87
<i>D_Loss_t</i>	+					-0.079	-56.17
<i>D_Loss_t*ΔCFO_t</i>	?					0.009	0.73
<i>D_Loss_t*D_ΔCFO_t</i>	+					0.021	9.79
<i>D_Loss_t*D_ΔCFO_t*ΔCFO_t</i>						0.473	24.96
<i>Adj R²</i>		0.294		0.313		0.543	
<i>No of obs</i>		68220		68220		68220	

Table 8.3 provides the definitions for all variables.

8.5.3 Fama-Macbeth statistics

One concern is cross-sectional correlation among firms in the pooled sample. To address this, table 8.9 reports average coefficients, adjusted R^2 values, and Fama-Macbeth (1973) t-statistics from annual cross-sectional regressions of equation 8.1. Results reported are for the book loss proxy $\Delta CFO_t < 0$. Previous results are qualitatively unchanged. Earlier conclusions, therefore, do not appear to be due to cross-sectional correlation overstating statistical significance.

Table 8.9 Time series means and t-statistics for coefficients from annual regressions of Total Accruals on Cash Flow from Operations. The proxy for an economic loss is $\Delta CFO_t < 0$

$$\text{Equation 8.1: } Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * \Delta CFO + \beta_3 * D_ \Delta CFO_t + \beta_4 * D_ \Delta CFO_t * \Delta CFO_t + \beta_5 * D_ Loss_t + \beta_6 * D_ Loss_t * D_ \Delta CFO_t + \beta_7 * D_ Loss_t * \Delta CFO_t + \beta_8 * D_ Loss_t * D_ \Delta CFO_t * \Delta CFO_t + \varepsilon_t$$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.036	-7.86	-0.032	-7.68	0.011	3.94
<i>CFO_t</i>	+	-0.216	-8.27	-0.233	-9.25	-0.509	-26.02
<i>ΔCFO_t</i>	-	-0.234	-22.18	-0.296	-16.35	-0.101	-10.60
<i>D_ΔCFO_t</i>	+			0.007	3.98	-0.000	-0.41
<i>D_ΔCFO_t*ΔCFO_t</i>	+			0.193	5.73	-0.222	-9.61
<i>D_Loss_t</i>	+					-0.113	-26.28
<i>D_Loss_t*ΔCFO_t</i>	?					-0.190	-4.87
<i>D_Loss_t*D_ΔCFO_t</i>	+					0.012	2.11
<i>D_Loss_t*D_ΔCFO_t*ΔCFO_t</i>						0.677	14.80
<i>Adj R²</i>		0.143		0.149		0.450	
<i>No of obs</i>		33584		33584		33584	

Table 8.3 provides the definitions for all variables.

8.5.4 Controls for Industry

To control for industry effects on economic losses, I partition the sample into 16 industries using the primary SIC code (Barth et al., 1998; Easton and Pae, 2004) and run pooled regressions with White (1980) adjusted standard errors of equation 8.1 for each major industry. Table 8.10 reports the industry composition of the sample.

Table 8.10 Industry subsample

Industry	Primary SIC codes	# firm- years	% of obs.
Agriculture	1 - 999	105	0.34
Mining and Construction	1000–1999, excluding 1300–1399	705	2.26
Food	2000–2111	1120	3.59
Textiles and Printing	2200–2790	2486	7.96
Chemicals	2800–2824, 2840–2899	1201	3.85
Pharmaceuticals	2830–2836	1231	3.94
Extractive Industries	2900–2999, 1300–1399	1479	4.74
Durable Manufacturers	3000–3999, excluding 3570–3579 and 3670–3679	10201	32.67
Computers	7370–7379, 3570–3579, 3670–3679	3979	12.74
Transportation	4000–4899	1765	5.65
Retail	5000–5999	4041	12.94
Services	7000–8999, excluding 7370–7379	2758	8.83
Others	9000 and above	158	0.51
Total		31229	100.00
Mean		2402	8.00

Table 8.11 shows the results for the pooled regressions for the 16 major industries. The results indicate that there is variation in the contemporaneous relation between accruals and cash flows on an industry level. The incremental loss coefficient for firms with an accounting profit, $D_CFO_t * CFO_t$, is positive for only one of the industry groups, Food, but not significantly so. For the other 15 industry groups, the incremental loss coefficient $D_CFO_t * CFO_t$ is negative, and significant for 8 industry groups. For loss firms, the incremental coefficient on $D_LOSS * D_CFO_t * CFO_t$ is positive for 15 of the 16 industry groups, and significant for 9 of the 16 industry groups. For the majority of the industries (88% of the firm years), results are similar to results in table 8.3. Finally, the explanatory power of the model is much higher for the profit and loss firm specification, consistent with previous results, indicating that the results are on average robust to industry specification.

Table 8.11 Coefficients and t-statistics from pooled regressions of Total accruals on cash flow form operations by industry

	<i>Intercept_t</i>	<i>CFO_t</i>	Δ <i>CFO_t</i>	$\frac{D_t}{\Delta$ <i>CFO_t</i>	$\frac{D_t \Delta$ <i>CFO_t</i> [*]	<i>D Loss_t</i>	$\frac{D_t \text{Loss}_t^*}{\Delta$ <i>CFO_t</i>	$\frac{D_t \text{Loss}_t^*}{D_t \Delta$ <i>CFO_t</i>	$\frac{D_t \text{Loss}_t^*}{D_t \Delta$ <i>CFO_t</i>	<i>Adj-R²</i>	<i>n</i>
Agriculture	0.015 (1.34)	-0.345 (-3.47)	-0.227 (-2.33)	-0.014 (-1.38)	-0.28 (-1.75)	-0.13 (-3.39)	0.261 (0.83)	0.085 (1.79)	0.716 (1.21)	0.47	157
Mining and Construction	0.019 (2.85)	-0.701 (-12.90)	-0.032 (-0.52)	0.002 (0.34)	-0.233 (-2.52)	-0.145 (-9.48)	-0.167 (-1.51)	0.046 (1.74)	0.932 (3.08)	0.43	705
Food	0.018 (4.17)	-0.516 (-16.15)	-0.234 (-8.36)	-0.002 (-0.69)	0.002 (0.05)	-0.099 (-9.82)	0.211 (3.29)	0.011 (0.67)	-0.214 (-1.58)	0.56	1120
Textiles and Printing	0.021 (5.93)	-0.594 (-20.67)	-0.112 (-3.76)	-0.005 (-2.10)	-0.171 (-4.12)	-0.096 (-13.80)	-0.217 (-2.88)	0.023 (2.03)	0.727 (5.32)	0.60	2486
Chemicals	0.012 (2.26)	-0.493 (-10.40)	-0.116 (-1.74)	0.000 (0.04)	-0.203 (-2.75)	-0.083 (-5.92)	-0.602 (-3.13)	-0.002 (-0.09)	0.951 (4.21)	0.49	1201
Pharmaceuticals	-0.003 (-0.41)	-0.208 (-5.73)	-0.107 (-2.37)	0.002 (0.38)	-0.311 (-3.87)	-0.115 (-6.79)	0.015 (0.15)	0.009 (0.41)	0.441 (2.78)	0.19	1231
Extractive Industries	0.003 (0.59)	-0.617 (-13.82)	0.01 (0.26)	-0.004 (-1.19)	-0.159 (-2.99)	-0.103 (-9.39)	-0.262 (-2.30)	0.012 (0.81)	0.513 (2.92)	0.45	1479
Durable Manufacturers	0.02 (10.10)	-0.512 (-28.99)	-0.121 (-7.70)	-0.001 (-0.78)	-0.202 (-9.28)	-0.121 (-25.94)	-0.108 (-2.37)	0.016 (2.31)	0.531 (7.65)	0.50	10201
Computers	0.004 (1.14)	-0.431 (-17.93)	-0.125 (-5.51)	0.002 (0.69)	-0.207 (-4.37)	-0.155 (-16.51)	-0.139 (-1.62)	0.009 (0.69)	0.646 (5.38)	0.41	3979
Transportation	0.012 (3.63)	-0.643 (-28.34)	-0.057 (-1.36)	0.001 (0.38)	-0.077 (-1.37)	-0.083 (-9.18)	-0.223 (-1.90)	0.003 (0.28)	0.393 (2.17)	0.55	1765
Retail	0.026 (11.44)	-0.658 (-35.06)	-0.087 (-5.11)	0.002 (1.28)	-0.142 (-5.41)	-0.12 (-15.13)	-0.084 (-0.94)	0.007 (0.61)	0.397 (2.76)	0.60	4041
Services	0.01 (2.86)	-0.517 (-18.68)	-0.137 (-4.41)	0.001 (0.23)	-0.182 (-4.09)	-0.108 (-11.96)	-0.136 (-1.78)	0.006 (0.45)	0.626 (4.85)	0.45	2758
Others	0.027 (1.29)	-0.389 (-1.97)	-0.207 (-1.36)	-0.025 (-1.67)	-0.162 (-1.04)	-0.151 (-4.68)	0.237 (0.72)	0.038 (0.98)	0.585 (1.45)	0.28	182

Table 8.3 provides the definitions for all variables.

8.5.5 Different proxy for economic loss

The non-market based test for hypothesis 8.1 in equation 8.1 employs a negative *change* in cash flow as a proxy for economic losses. Ball and Shivakumar (2006) also employ a negative *level* of cash flow as a non-market based proxy for an economic loss. However, given that equation 8.1 partitions the sample on firms based on the level of net income, which is the sum of the level of cash flow and the level of accruals, using the level of cash flow as a proxy for economic losses to test hypothesis 8.1 induces a potential bias in the test statistics. For the purpose of comparison to Ball and Shivakumar (2006), in table 8.12, I also run equation 8.1 with a negative level of cash flow as a proxy for an economic loss. The results in table 8.12 show that using this specification does not affect the tenure of the results of hypothesis 8.1.

Table 8.12 Coefficients and t-statistics for coefficients from regressions of Total Accruals on Cash Flow from Operations. The proxy for an economic loss is $CFO_t < 0$

$$Acc_t = \beta_0 + \beta_1 * CFO_t + \beta_2 * D_CFO_t + \beta_3 * D_CFO_t * CFO_t + \beta_4 * D_Loss_t + \beta_5 * D_Loss_t * D_CFO_t + \beta_6 * D_Loss_t * CFO_t + \beta_7 * D_Loss_t * D_CFO_t * CFO_t + \varepsilon_t$$

	Pred Sign	Regression I		Regression II		Regression III	
		Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
<i>Intercept_t</i>	?	-0.035	-40.14	-0.011	-12.12	0.026	-49.46
<i>CFO_t</i>	+	-0.260	-32.86	-0.488	-70.45	-0.631	-133.18
<i>D_CFO_t</i>	-			0.009	3.98	0.019	13.95
<i>D_CFO_t*CFO_t</i>	+			0.570	25.26	-0.457	-22.36
<i>D_Loss_t</i>	+					-0.105	-46.92
<i>D_Loss_t*CFO_t</i>	+					-0.339	-13.81
<i>D_Loss_t*D_CFO_t</i>	?					-0.021	-5.64
<i>D_Loss_t*D_CFO_t*CFO_t</i>	+					1.375	36.26
<i>Adj R²</i>		0.08		0.13		0.49	
<i>No of obs</i>		41382		41382		41382	

Table 8.3 provides the definitions for all variables.

8.6 Summary and Conclusion

In this chapter, it is hypothesized that there is a difference between accounting profit firms and accounting loss firms in one of the major roles of accruals, the timely recognition of unrealized (economic) losses in earnings. The results are consistent with this prediction. First, for accounting profit firms, accruals do not perform the role of timely loss recognition. Rather, for accounting profit firms with an economic loss, accruals enhance the other major role of accruals, the reduction of noise in transitory cash flows in earnings. As a result of accruals ameliorating the noise in cash flow, accruals have a negative relation with cash flow. For

profit firms with an economic loss, this relation is even more negative. However, for accounting loss firms with an economic loss, accruals are less prevalent in reducing the noise in cash flow. The recognition of unrealized losses results in a positive relation between accruals and cash flow, and as a result, the relation between accruals and cash flow is less negative for loss firms with an economic loss.

In this chapter, it is also shown that the difference in conditional conservatism using accruals is caused in part by a major class of accruals, the special items. Evidence is presented that special items are on average negative for loss firms, and zero for profit firms. The negative nature of special items for loss firms is elevated by an economic loss. Furthermore, special items have a positive relation with cash flow, indicating that special items increase the noise of transitory cash flows in earnings, as predicted by the role of timely loss recognition. For firms with an accounting loss, the positive relation between special items and cash flow is even more prevalent for firms with an economic loss. As a result, the relation between special items and cash flow is even more positive for accounting loss firms with an economic loss. However, for accounting profit firms with an economic loss, special items reduce the positive relation between special items and cash flow. That is, the noise in transitory cash flow in earnings is reduced by special items for profit firms, with an economic loss. These results indicate that special items are, at least partly, responsible for the difference in timely loss recognition using accruals between profit firms and loss firms.

The contribution to the accounting literature made in this chapter is to show how accrual adjustments may differ between firms. In particular, it is shown that accounting profit firms make different accrual adjustments to reflect an economic loss than accounting loss firms. Accounting profit firms are more likely to use accruals to ameliorate the transitory cash flows in earnings, while accounting loss firms are more likely to accentuate the transitory cash flow in earnings. This finding is important for financial statement analysis purposes. The results demonstrate how users of financial statements should differentiate between accounting loss firms and accounting profit firms. Accounting loss firms are likely to show more volatile earnings as the result of an economic loss than accounting profit firms. This could be interpreted as lower earnings quality when in fact the timely recognition of unrealized losses reflects higher earnings quality.

My results also contribute to the earnings management literature. Some studies use measures of accrual volatility and earnings volatility to measure earnings management (e.g. Leuz et al, 2003). However, the results in this chapter show that higher accrual volatility and higher earnings volatility can also reflect managers' information on the revision of future expected cash flows rather than earnings management. Also, some studies document a discontinuity at zero in the distribution of earnings as evidence of earnings management (Burgstahler and Dichev 1997, DeGeorge et al. 1999). Beaver et al. (2005) suggest that the

discontinuity is the result of the different treatment of special items between profit firms and loss firms. My results confirm that special items are used differently for conditional conservatism by profit firms and loss firms, potentially causing the discontinuity. However, one can not conclude that earnings management is not a factor in the differences in accounting between accounting profit firms and accounting loss firms. For instance, accounting loss firms may have an incentive to take a big bath, since results are already negative, while accounting profit firms may have an incentive to postpone the realization of an economic loss for earnings management purposes. Future research can incorporate my results in the examination of earnings management in accounting profit and accounting loss firms.

