Do Abnormal Accrual Models Detect Earnings Management? Evidence from Discretionary Changes in Accounting Estimates

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Objective

This study evaluates whether abnormal accruals, estimated from conventional accrual models, can detect discretionary changes in accounting estimates (DCAEs).

Introduction

- A change in accounting estimate (CAE) is "a change that has the effect of adjusting the carrying amount of an existing asset or liability or altering the subsequent accounting for existing or future assets or liabilities" (ASC 250).
- Examples are the CAEs related to the percentage of completion and contract revenue recognition, changes in estimated useful life or salvage value of property, plant, and equipment, changes in the estimated allowance for doubtful accounts, changes in estimated warranty reserve, restructuring reserve, and changes in other estimates.
- Studies (Bernard and Skinner 1996; Dechow and Dichev 2002; Dechow et al. 2003; Dechow et al. 2011; Stubben 2010; McNichols and Stubben 2018) raise questions on the validity of the abnormal accrual models.
- Testing the efficacy of various abnormal accrual models to detect CAEs is well meaning, as AAERs and restatements are ex-post measures that suffer from noisy events.
- We use actual changes in accounting estimates (CAEs) which speak better to the validity of abnormal accrual models.
- In 2002, the SEC filed suit against Xerox for using various opportunistic accounting choices from 1997 to 2000, many of which included changes in accounting estimates.
- The Public Company Accounting Oversight Board (PCAOB) recognizes that accounting estimates are a tool for earnings management and accordingly have relevant audit standards.
- AS 2810: Evaluating Audit Results (2010) requires that auditors examine whether management uses "swings" in accounting estimates to meet an earnings target.

Hypothesis

- In addition to practitioners and regulators, several academic studies posit that accrual-based earnings management can be achieved by changing accounting estimates (Zang 2011; Dichev etal. 2013; Schipper 1989).
- Recent research provides evidence of using CAEs to meet/beat analysts forecast doing opinion shopping, and other opportunistic reasons (Albrecht et al. 2017; DeFond et al. 2018).
- Surveying 169 Chief Financial Officers (CFOs) public companies, Dichev et al. (2013) report that using change in estimates is one of the proxies to detect earnings management.

H1: Abnormal accrual proxies can detect discretionary changes in accounting estimates (DCAEs).

Methods

Discretionary CAEs Measurement

Discretionary CAE measure (DCAEs) is based on whether firms use CAEs to meet or beat any of three earnings benchmarks, where a firm is unable to meet or beat benchmark without using the CAEs. Following Barua et al. (2010) and Caylor (2010), this study uses the following three benchmarks.

(I) If actual current year EPS >= prior year EPS, but adjusted current year EPS < prior year EPS; or
(II) If actual current year EPS >=0, but adjusted current year EPS < 0; or
(III) If actual current year EPS >= Analysts' EPS estimate, but adjusted current year EPS < Analysts' EPS estimate,
Where Adjusted EPS= EPS - (Post-tax CAE impact / Shares outstanding)

Detection of Discretionary CAEs by Accrual Models-Testing Hypothesis 1:
We use the following equation to examine the predictive power of accrual models:

$$DCAEs=\beta_0+\beta_1 ASSET+\beta_2 LAGROA+\beta_3 LEV+\beta_4 BIG4+\beta_5 MODEL +Year\ Fixed\ Effects+Industry\ Effects+\epsilon_{it}$$

MODEL represents the abnormal accrual from the Jones (1991) model (including performance-adjusted versions), or the modified Jones (including performance-adjusted versions), or the Dechow and Dichev (2002) model or the Dechow and Dichev (2002) model modified by McNichols (2002), or the performance matched model (Kothari et al. 2005), or the revenue management model (Stubben 2010), or the Beneish model (Beneish 1997), depending on which model we examine.

Validation of DCAEs Measure

we use the following audit fees model to investigate whether audit fees are higher for DCAEs compared to NDCAEs:

LNAFEE= β0+β1AR_INVENTORY + β2 FOREIGN + β3 BUS_SEG+β4 GEO_SEG+ B5OP_CASHFLOW+β6RESTATEMENT+β7LOSS+β8LAGROA +β9MERGER+β10BIG +β11 LEV + β12ASSET+ β13GOING_CONCERN + β14 ICMW + β15DCAEs/PNDCAEs/PCAEs/NCAEs/CAEs+YEAREFFECTS+ε

Results

Logistic Regression of DCAEs on Total Accruals and Abnormal Accruals Model Estimates

	1	2	3	4	5	6	7	8	9	10	11
	TA	JONES	MJONES	JONES_ LROA	MJONES_ LROA	PJONES	PMJONES	STUB	DD	MDD	BEN
MODEL	2.51 **	2.786 **	2.693 **	2.568 **	2.337 *	0.565	0.498	0.450	2.55 *	3.40 **	0.09
	[0.041]	[0.020]	[0.025]	[0.033]	[0.052]	[0.398]	[0.451]	[0.838]	[0.087]	[0.029]	[0.454]
CONTROLS	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
YEAR FIXED EFFECT	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
INDUSTRY FIXED EFFECT	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Observations (DCAEs)	245	245	245	245	245	245	245	245	224	224	196
Observations (Non-DCAEs)	681	681	681	681	681	681	681	681	621	621	599
Total (N=)	926	926	926	926	926	926	926	926	845	845	795
Pseudo R^2	0.12	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.13	0.13	0.10

Discussion

Findings from H1 Test:

- We report the predictive power of abnormal accrual estimates from the JONES model, modified JONES model, JONES model controlled for performance, and modified Dechow and Dichev (MDD) (significant at p<5%).
- The coefficient (3.404) on the modified Dechow and Dichev (MDD) model is higher compared to other accrual models in detecting DCAEs.

Additional Test: Validation of DCAEs

Regression of Audit Fess on DCAEs

	CAE Sample	Full Sample				
	[1]	[2]	[3]	[4]	[5]	[6]
Discretionary CAEs	0.114 ***	0.230 ***				
(n=235)	[0.007]	[0.000]				
Positive NonDiscretionary CAEs			0.136 ***			
(n=295)			[0.000]			
Positive CAEs				0.103 ***		
(n=530)				[0.007]		
Negative CAEs					0.077 ***	
(n=370)					[0.012]	
CAEs						0.141 ***
(n=900)						[0.000]
CONTROLS	Included	Included	Included	Included	Included	Included
YEAR EFFECT	Included	Included	Included	Included	Included	Included
Adj. R^2	0.81	0.74	0.74	0.81	0.74	0.75
N	900	21,632	21,632	21,632	21,632	21,632

Conclusions

- We use discretionary changes in accounting estimate, a new evidence of earnings management to examine the predictive power of abnormal accrual models
- Accounting changes can be for some valid reason and not for opportunistic purpose. Hence, this study does not intend to say that all of the change in accounting estimate is solely attached to opportunistic reason. Rather, we separate discretionary and non-discretionary changes in accounting estimates.
- We address the validity concern discussed by a large body of literature regarding the limitations of samples against which recent studies test abnormal accrual models (Nezlobin et al. 2018; Khan et al. 2019).

References

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Thank You