Errors in Estimating Unexpected Accruals in the Presence of Large Net External Financing

THINK.CHANGE.DO

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Motivations – Earnings Management around External Financing

> Prevalent evidence of earnings management (EM) in firms making external equity and debt financing (XFIN)

- IPOs (Teoh et al., 1998a, JF)
- SEOs (Teoh et al., 1998b, JFE; Rangan 1998, JFE)
- Open market share repurchase (Gong et al. 2008, JF)
- Convertible debts (Urcan and Kieschnick 2006)
- Unrated straight debt (Anthony et al. 2006)
- Why is this "evidence" so pervasive given poor ability to detect EM? (Dechow et al. 1995, Kothari et al. 2005)
- Journal bias towards studies that reject the null!!

Motivations – Earnings Management around External Financing

> Why is EM found to be so pervasive around XFIN , given the poor ability of unexpected accrual models to detect EM?

- Relying on the (modified) Jones-type model
- Only detect plausible levels of EM (2% of TA) for about 30-40% of the time (Dechow et al. 1995; Kothari et al. 2005)
- EM or the result of type I errors?

Motivations – Earnings Management around External Financing

> How pervasive are XFIN events?

- XFIN events are very pervasive (Leary and Roberts 2005)
  - 27% of firm-quarters for 1984-2001
  - This is roughly once per year per firm!
  - More frequent for debt: large debt issue (16,021), debt retirement (10,920), equity issuance (6,867) and repurchase (5,723)
  - % of MV for debt (12% and 15%) and equity (9% and 2%)
- Most earnings management studies typically ignore any potential effect of XFIN events on measurement and estimation of unexpected accruals

Motivations – Earnings Management around External Financing

> How can we reconcile recent challenges to EM around IPO with the past evidence?

- Past evidence: positive DACs in IPO year (Teoh et al. 1998)
- Armstrong et al. (2008): negative Pre-IPO DACs
- No empirical evidence of incentives for EM
  - IPO issue price decreasing in DACs
  - Executive compensation decreasing in DACs
  - No abnormal returns for insiders in firms with high DACs
  - Probability of litigation increasing in DACs

Motivations – Earnings Management around External Financing

> Ball and Shivakumar (2008): *"If a firm invests IPO proceeds in accounts receivable, inventory or any other non-cash current asset during the IPO year, then its current accruals for that year will be positive, regardless of whether accruals are calculated from successive balance sheets or from cash flow statements."*

> *"Any use of the IPO proceeds to bolster working capital (other than cash) is likely to be falsely identified as income-increasing earnings management, even after controlling for growth in sales."*

> *"Current accruals of this sort have nothing to do with managerial manipulation, but merely reflect the firm's decision to invest some of the IPO proceeds in operating activities."*

Motivations – Detecting Earnings Management

- The behavior of unexpected accruals around certain events
- McNichols and Wilson (1988) and Dechow et al. (1995)

$$UEXAC^{*} = b * PART + e \qquad (1)$$

- *UEXAC** is unobservable and measured as *UEXAC* = *UEXAC** + *η*

$$UEXAC = \hat{g} * PART + e \qquad (2)$$

$$\hat{g} = b + bias = b + r(PART, h) * \frac{s_h}{s_{PART}}$$

Motivations – Detecting Earnings Management

$$\hat{g} = b + bias = b + \underline{r(PART, h)} * \frac{s_h}{s_{PART}}$$

> The potential bias (unobservable error) comes from
  - Firm performance, growth, fixed asset structure (Young 1999; McNichols 2002; Kothari et al. 2005)
  - A firm’s life cycle (Liu 2008)
  - ***<u>Maybe financing cash inflow??? (Ball and Shivakumar 2008)</u>***

Motivations – Research Questions

$$\hat{g} = b + bias = b + \underline{r(PART, h)} * \frac{s_h}{s_{PART}}$$

> Does the presence of large net external financing (ΔXFIN) introduce unobservable measurement error, *η*?

> If YES, to what extent the presence of large ΔXFIN affects empirical conclusions in testing EM?

> How can we control for such potential bias?

Overview – what we do

- Accounting relation b/w ΔXFIN and UEXAC
- Estimation bias:
  - Economically significant, ranging from 0.2% to 3.5% of average total assets
- Simulation analysis:
  - Type I errors rise dramatically for UEXAC even at low contamination levels
- Comparison for controlling approach:
  - Compare regression-based and matching approaches
- Relative importance
  - Debt versus Equity financing
- “Replication” of EM study around share repurchase

The Relation between UEXAC and ΔXFIN

> The balance sheet identity
  Total Assets = Total Liabilities + Owners Equity

> Distinguish financial Assets/Liabilities from operating Assets/Liabilities
  CASH + Operating Assets
  = Debt (*D*) + Operating Liabilities + Equity (E)

$\rightarrow$ NOA = D + E – CASH
$\rightarrow$ ΔNOA = ΔD + ΔE – ΔCASH

The Relation between UEXAC and ΔXFIN

- Incorporate clean surplus assumptions for ΔD and ΔE, that is,
  $\Delta E = INCOME + \Delta EQUITY$
  ΔD = Interest Expense - Interest Paid + $\Delta DEBT$
  - *INCOME* represents net income
  - Δ*EQUITY* is net cash proceeds received from equity holders (equity issuances less dividends and repurchases)
  - Δ*DEBT* is net noninterest cash inflow received from debt holders (debt issuances less debt repayments)
  - ΔXFIN (net external financing) = $\Delta EQUITY + \Delta DEBT$

- Assume interest expense = interest paid, we have
  $\Delta NOA = \Delta XFIN + INCOME - \Delta CASH$

A comprehensive measure of total accruals (Dechow et al. 2008; Richardson et al. 2005)

The Relation between UEXAC and ΔXFIN

$$UEXAC^* + EXAC^* + REST\_\Delta NOA = \Delta XFIN + INCOME - \Delta CASH$$

- Suppose the identified EM stimulus is unrelated to ΔXFIN
  - Corr(UEXAC*, Δ*XFIN*) = 0
- If UEXAC is a well-specified proxy for UEXAC*, then
  - Corr(UEXAC, Δ*XFIN*) = 0
- Corr(ΔNOA, Δ*XFIN*)=0.545
  - Dechow et al. (2008, Table 2, p. 550)
- Corr(UEXAC, Δ*XFIN*)=???

Data and Variable Measurement

- Compustat annual data for 1987-2006, excluding
  - Financial firms
  - Book value of assets missing or less than $1 million
  - Missing value of sales or NI
  - Abs(TACC/Average TA)>1 (Kothari et al. 2005)
  - Abs(ΔXFIN/Average TA)>1 (Bradshaw et al. 2006)
- 131,778 firm-year observations
- ΔXFIN (net external financing) = ΔEQUITY + ΔDEBT
  - Statement of cash flow data (Bradshaw et al. 2006)

Data and Variable Measurement

- Total accruals (TACC) and current accruals (CACC)
  - Statement of cash flow data (Hribar and Collins 2002)
  - Robust to balance sheet data
- Unexpected accruals (UEXAC)

	Total accruals	Current accruals
Jones	Not reported	Not reported
Modified Jones (MJ)	UEXAC_MJT	UEXAC_MJC
Jones + ROA	Not reported	Not reported
Modified Jones + ROA	UEXAC_MJT_ROA	UEXAC_MJC_ROA
Performance-matched Jones	Not reported	Not reported
Performance-matched MJ	UEXAC_PMJT	UEXAC_PMJC
Dechow and Dichev (DD)	N/A	UEXAC_DD
McNichols's DD	N/A	UEXAC_DDM

Correlation Analysis (Table 4)

Variables	TACC	CACC	ΔXFIN	ΔDebt	ΔEquity	ΔCash	NI
TACC	—	0.69	0.06	0.08	0	-0.01	0.51
CACC	0.69	—	0.17	0.13	0.1	-0.06	0.24
ΔNOA	0.44	0.46	0.41	0.36	0.19	-0.03	0.28
UEXAC_MJT	0.91	0.63	0.06	0.07	0	-0.04	0.43
UEXAC_MJT_ROA	0.78	0.63	0.21	0.16	0.11	-0.14	0.05
UEXAC_PMJT	0.55	0.43	0.14	0.1	0.08	-0.09	0.02
UEXAC_DD	0.57	0.83	0.11	0.06	0.09	0.04	0.36
UEXAC_DDM	0.49	0.74	0.05	0.02	0.02	0	0.31
Spearman							
UEXAC_MJT	0.84	0.64	0.13	0.13	0	-0.09	0.28
UEXAC_MJT_ROA	0.72	0.6	0.25	0.2	0.09	-0.17	-0.05
UEXAC_PMJT	0.51	0.41	0.16	0.12	0.06	-0.11	0
UEXAC_DD	0.54	0.78	0.15	0.08	0.08	0	0.35
UEXAC_DDM	0.46	0.68	0.1	0.05	0.02	-0.03	0.26

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Sorting by XFIN Quartile (Table 5)

% of Total Assets	Low	Q2	Q3	High
UEXAC_MJT	-1.08	0.17	0.62	1.21
UEXAC_MJT_ROA	-1.4	-0.48	0.46	2.69
UEXAC_PMJT	-1.36	-0.58	0.34	2.72
UEXAC_MJC	-1.13	-0.48	0.46	1.91
UEXAC_MJC_ROA	-1.26	-0.7	0.39	2.42
UEXAC_PMJC	-1.3	-0.6	0.47	2.34
UEXAC_DD	-0.62	-0.55	0.28	1.33
UEXAC_DDM	-0.34	-0.12	0.25	0.45

Two approaches to control for ΔXFIN

> Following Kothari et al. (2005)
  - Regression-based approach
    - ΔXFIN as an additional regressor in UEXAC models
  - Matching approach
    - UEXAC matched on industry and ΔXFIN
    - UEXAC* = UEXAC(sample firm) – UEXAC(control firm)

Correlation Analysis – After controlling

	Regressed on ΔXFIN			Matched on ΔXFIN		
UEXAC	ΔXFIN	ΔDebt	ΔEquity	ΔXFIN	ΔDebt	ΔEquity
UEXAC_MJT	0	0.05	-0.03	0	0.02	-0.02
UEXAC_MJT_ROA	0	0.04	-0.02	0	0.01	-0.01
UEXAC_PMJT	0.12	0.08	0.07	-	-	-
UEXAC_DD	0	0.02	0.01	0	-0.01	0
UEXAC_DDM	0	0.01	0	-0.01	-0.01	0

Sorting Analysis – Regressed on ΔXFIN

% of Total Assets	Low	Q2	Q3	High
UEXAC_MJT	-0.86	0.19	0.41	0.26
UEXAC_MJT_ROA	-0.98	0.17	0.64	0.18
UEXAC_PMJT	-2.02	-0.44	0.27	2.04
UEXAC_MJC	-0.8	-0.1	0.47	0.36
UEXAC_MJC_ROA	-0.82	-0.11	0.54	0.33
UEXAC_PMJC	-1.32	-0.27	0.51	0.99
UEXAC_DD	-0.44	-0.25	0.37	0.3
UEXAC_DDM	-0.29	-0.1	0.22	0.17

Sorting Analysis – Matched on ΔXFIN

% of Total Assets	Low	Q2	Q3	High
UEXAC_MJT	-0.02	-0.02	0.03	-0.06
UEXAC_MJT_ROA	-0.04	-0.03	-0.01	-0.03
UEXAC_PMJT				
UEXAC_MJC	-0.07	-0.03	0.08	-0.02
UEXAC_MJC_ROA	-0.07	0.01	0.03	-0.01
UEXAC_PMJC				
UEXAC_DD	-0.05	-0.07	-0.05	-0.02
UEXAC_DDM	-0.06	-0.06	-0.03	-0.05

Extent of the bias in UEXAC estimation (Table 6)

$$bias = \hat{g} - b = r(PART, h) * \frac{s_h}{s_{PART}}$$

> Two Pseudo-*PART* variables
  – PART $_{\Delta XFIN >Q3}$ = 1 when the firm's Δ*XFIN* > 75th percentile of the dist. in the corresponding year, and 0 otherwise
  – PART $_{\Delta XFIN <Q1}$ = 1 when the firm's Δ*XFIN* < 25th percentile

> η: the difference b/w UEXAC before and after controlling for Δ*XFIN*

> Assumptions
  – Measurement errors mainly come from Δ*XFIN*
  – UEXAC is free from measurement error after controlling for Δ*XFIN*

Bias in UEXAC estimation

	True model: regressed on ΔXFIN		True model: matched on ΔXFIN	
% of Total Assets	Bias($PART_{\Delta XFIN>Q3}$)	Bias($PART_{\Delta XFIN<Q1}$)	Bias($PART_{\Delta XFIN>Q3}$)	Bias($PART_{\Delta XFIN<Q1}$)
UEXAC_MJT	1.03	-0.73	1.41	-1.73
UEXAC_MJT_ROA	3.31	-2	3.53	-3.14
UEXAC_PMJT	0.89	-0.67		
UEXAC_MJC	2.07	-1.32	2.58	-2.15
UEXAC_MJC_ROA	2.88	-1.75	3.3	-2.6
UEXAC_PMJC	1.83	-1.2		
UEXAC_DD	1.39	-0.74	1.74	-1.23
UEXAC_DDM	0.32	-0.2	0.53	-0.51

What is the impact of the bias on statistical significance? (Table 7)

- A significant bias in UEXAC estimation
- The effect of estimation bias on statistical inferences?
- Regress UEXAC on pseudo-PART
  - $UEXAC = \alpha + \beta * PART_{\Delta XFIN > Q3} + \varepsilon$
  - $UEXAC = \alpha + \beta * PART_{\Delta XFIN < Q1} + \varepsilon$
- Time-series average of estimates and its significance

Regression Analysis – Before control

Dependent variables	$PART_{\Delta XFIN>Q3}$	T-stat	$PART_{\Delta XFIN<Q1}$	T-stat
UEXAC_MJT	1.68	4.8**	-2.17	-10.3**
UEXAC_MJT_ROA	3.62	13.9**	-3.61	-21.8**
UEXAC_PMJT	3.7	10.8**	-3.5	-15.6**
UEXAC_MJC	2.66	11.1**	-2.56	-12.7**
UEXAC_MJC_ROA	3.17	12.3**	-2.97	-14.6**
UEXAC_PMJC	3.24	10.3**	-3.08	-13.9**
UEXAC_DD	1.71	9.3**	-1.31	-9.4**
UEXAC_DDM	0.63	4.7**	-0.62	-6.7**

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Regression Analysis – Regressed on ΔXFIN

Dependent variables	$PART_{\Delta XFIN>Q3}$	T-stat	$PART_{\Delta XFIN<Q1}$	T-stat
UEXAC_MJT	0.66	3.0**	-1.35	-10.1**
UEXAC_MJT_ROA	0.33	2.3*	-1.39	-8.7**
UEXAC_PMJT	2.95	12.1**	-2.75	-8.7**
UEXAC_MJC	0.79	6.9**	-1.19	-11.6**
UEXAC_MJC_ROA	0.51	5.6**	-1.1	-11.6**
UEXAC_PMJC	1.78	6.0**	-1.82	-13.0**
UEXAC_DD	0.53	5.9**	-0.55	-6.7**
UEXAC_DDM	0.37	4.0**	-0.44	-7.8**

Regression Analysis – Matched on Δ*XFIN*

Dependent variables	$PART_{\Delta XFIN>Q3}$	T-stat	$PART_{\Delta XFIN<Q1}$	T-stat
UEXAC_MJT	0.08	0.3	-0.21	-1.6
UEXAC_MJT_ROA	-0.04	-0.2	-0.05	-0.3
UEXAC_PMJT				
UEXAC_MJC	0.27	1.5	-0.12	-1.1
UEXAC_MJC_ROA	0.06	0.5	-0.02	-0.1
UEXAC_PMJC				
UEXAC_DD	-0.05	-0.5	0.18	1.4
UEXAC_DDM	0.1	1.2	0.01	0.1

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Simulation Analysis

> Bias: 100% overlap between PART and large ΔXFIN (either PART $_{\Delta XFIN > Q3}$ or PART $_{\Delta XFIN < Q1}$).

> What happens if only partially contaminated?

> The effect of estimation bias on statistical inferences?

> Simulation analysis follows Hribar and Collins (2002) and Kothari et al. (2005)

Simulation Analysis

- For a given contamination level (X, e.g. 10%), take a random sample of 1000*X (e.g. 100) firms with large positive ΔXFIN ($PART_{\Delta XFIN>Q3}$ =1), and 1000(1-X) (e.g. 900) firms without large ΔXFIN (Q2 and Q3) without replacement
- Using 250 iterations of this procedure and calculate the average estimation bias and the prob. of committing a type I error at 5% and 1% for a one tailed t-test
- Repeat the above for X=0%, 10%, 20%, …, 100%
- Repeat for firms with large negative ΔXFIN ($PART_{\Delta XFIN<Q1}$ =1)

Simulation Analysis – Estimation bias (Table 8)

η: the difference UEXAC b/w before and after controlling for ΔXFIN

$PART_{\Delta XFIN>Q3}$ and matched on ΔXFIN

X	20%	40%	60%	80%
UEXAC_MJT	0.57	0.73	0.89	1.07
UEXAC_MJT_ROA	0.54	1.08	1.62	2.17
UEXAC_MJC	0.17	0.56	0.96	1.36
UEXAC_MJC_ROA	0.32	0.86	1.38	1.91
UEXAC_DD	0.22	0.5	0.77	1.06
UEXAC_DDM	0.18	0.26	0.35	0.45

Simulation Analysis – Estimation bias

η: the difference b/w UEXAC before and after controlling for ΔXFIN PART$_{\Delta XFIN<Q1}$ and matched on ΔXFIN

X	20%	40%	60%	80%
UEXAC_MJT	0.05	-0.27	-0.62	-0.96
UEXAC_MJT_ROA	-0.53	-1.07	-1.61	-2.14
UEXAC_MJC	-0.4	-0.77	-1.14	-1.5
UEXAC_MJC_ROA	-0.63	-1.05	-1.48	-1.9
UEXAC_DD	-0.26	-0.46	-0.65	-0.84
UEXAC_DDM	0.01	-0.09	-0.16	-0.25

Simulation Analysis – Rejection Frequencies at 5% level (Table 9)

Prob(Type I error) for $PART_{\Delta XFIN>Q3}$ before controlling for $\Delta XFIN$

X	0%	20%	40%	60%	80%	100%
UEXAC_MJT	8.00%	55.20%	68.40%	74.80%	85.60%	91.60%
UEXAC_MJT_ROA	3.60%	66.40%	99.20%	100.00%	100.00%	100.00%
UEXAC_PMJT	2.00%	32.40%	77.60%	97.20%	100.00%	100.00%
UEXAC_MJC	2.40%	43.60%	92.40%	100.00%	100.00%	100.00%
UEXAC_MJC_ROA	2.00%	48.40%	97.60%	100.00%	100.00%	100.00%
UEXAC_PMJC	3.60%	33.60%	86.00%	98.80%	100.00%	100.00%
UEXAC_DD	2.00%	25.60%	60.80%	95.60%	99.60%	100.00%
UEXAC_DDM	7.20%	22.80%	33.60%	42.80%	51.20%	66.80%

Simulation Analysis – Rejection Frequencies (5%)

Prob(Type I error) for PART$_{\Delta XFIN>Q3}$ with a regression-based control

X	0%	20%	40%	60%	80%	100%
UEXAC_MJT	28.40%	25.20%	26.80%	20.80%	16.80%	13.20%
UEXAC_MJT_ROA	44.80%	32.00%	22.00%	20.00%	19.60%	14.80%
UEXAC_PMJT	4.00%	26.40%	61.60%	88.40%	96.00%	99.20%
UEXAC_MJC	21.20%	24.00%	30.00%	31.60%	29.60%	30.40%
UEXAC_MJC_ROA	26.40%	29.20%	25.60%	31.60%	32.80%	33.60%
UEXAC_PMJC	16.00%	30.80%	46.40%	59.20%	71.20%	82.80%
UEXAC_DD	8.80%	12.00%	17.60%	21.20%	26.00%	29.20%
UEXAC_DDM	8.80%	10.40%	11.60%	13.20%	19.20%	20.80%

Simulation Analysis – Rejection Frequencies (5%)

Prob(Type I error) for PART$_{\Delta XFIN>Q3}$ with a matching control

X	0%	20%	40%	60%	80%	100%
UEXAC_MJT	6.40%	4.40%	6.00%	3.60%	4.40%	2.40%
UEXAC_MJT_ROA	3.60%	3.60%	3.20%	4.40%	2.80%	2.80%
UEXAC_PMJT						
UEXAC_MJC	6.40%	6.00%	6.40%	5.20%	4.40%	5.20%
UEXAC_MJC_ROA	5.20%	4.40%	2.80%	3.60%	3.20%	2.00%
UEXAC_PMJC						
UEXAC_DD	2.80%	3.20%	3.60%	2.00%	2.00%	2.00%
UEXAC_DDM	2.00%	4.00%	2.00%	2.80%	2.40%	3.60%

Simulation Analysis – Rejection Frequencies (5%)

Prob(Type I error) for PART$_{\Delta XFIN<Q1}$ before controlling for ΔXFIN

X	0%	20%	40%	60%	80%	100%
UEXAC_MJT	2.00%	4.00%	19.60%	49.60%	82.00%	96.00%
UEXAC_MJT_ROA	4.00%	30.80%	73.20%	94.40%	99.20%	100.00%
UEXAC_PMJT	5.60%	22.40%	47.20%	68.80%	89.60%	95.60%
UEXAC_MJC	4.80%	27.60%	65.60%	89.20%	97.60%	99.20%
UEXAC_MJC_ROA	18.40%	53.60%	86.80%	97.60%	100.00%	100.00%
UEXAC_PMJC	7.20%	21.60%	52.40%	82.40%	93.20%	99.20%
UEXAC_DD	20.80%	36.40%	55.60%	70.80%	80.40%	89.20%
UEXAC_DDM	2.00%	6.80%	13.60%	30.80%	44.00%	60.40%

Simulation Analysis – Rejection Frequencies (5%)

Prob(Type I error) for PART$_{\Delta XFIN<Q1}$ with a matching control

X	0%	20%	40%	60%	80%	100%
UEXAC_MJT	3.60%	3.60%	6.40%	4.40%	5.20%	5.20%
UEXAC_MJT_ROA	4.40%	6.40%	7.20%	7.60%	5.20%	4.80%
UEXAC_PMJT						
UEXAC_MJC	4.40%	3.60%	8.00%	6.40%	7.60%	7.60%
UEXAC_MJC_ROA	4.40%	4.40%	4.80%	6.80%	6.00%	7.60%
UEXAC_PMJC						
UEXAC_DD	7.60%	7.60%	7.60%	8.00%	8.00%	6.80%
UEXAC_DDM	7.20%	8.00%	8.00%	7.60%	7.20%	6.80%

Summary to this point

- Economically significant estimation bias, ranging from 0.2% to 3.5% of average total assets
- Type I errors rise dramatically for UEXAC even at low contamination level (e.g. 40%)
- Matching on ΔXFIN is better
- Robustness checks:
  - Accounting data from balance sheets
  - Alternative measure of ΔXFIN
  - Different measures of unexpected accruals
  - 5% and 1% significance level

Debt Financing versus Equity Financing

- Does any estimation bias mainly come from changes in debt or equity external financing?
- Debt financing is much more pervasive than equity financing (Eckbo et al. 2007)
  - Issuance frequency (37,298 vs. 11,151, 1980-2003)
  - Issuance amount (a typically deal, $230 vs. $86 million)

Debt Financing versus Equity Financing (Table 11 – regress on Q3 and Q1 indicators)

	Debt				Equity			
Dependent variables	>Q3	T-stat	<Q1	T-stat	>Q3	T-stat	<Q1	T-stat
UEXAC_MJT	1.91	7.00**	-2.44	-10.30**	0.34	1.36	0.53	2.90**
UEXAC_MJT_ROA	3.25	13.29**	-2.82	-11.43**	1.51	7.78**	-1.12	-7.75**
UEXAC_PMJT	2.81	7.83**	-2.54	-6.22**	1.82	7.43**	-1.49	-7.01**
UEXAC_MJC	2.4	11.95**	-2.01	-9.62**	1.53	5.71**	-0.44	-4.36**
UEXAC_MJC_ROA	2.78	13.61**	-2.1	-10.33**	1.82	6.80**	-0.95	-7.87**
UEXAC_PMJC	2.61	10.70**	-1.89	-6.53**	1.87	6.02**	-1.14	-6.67**
UEXAC_DD	1.2	8.13**	-0.81	-4.80**	1.62	7.77**	-0.07	-1.04
UEXAC_DDM	0.56	4.45**	-0.36	-2.16*	0.63	4.87**	0.11	1.37

** (*) indicates significant at the 1% (5%) level for two tailed test.

More likely to come from debt financing!

“Replication”: EM around share repurchase

> Gong et al. (2008) report sig. negative UEXAC around share repurchases
> Share repurchases from SDC for 1988-2002
> Conditional procedure to identify repurchase announcement
> Excluding block-repurchases and self-tender offers
> 1,050 open-market repurchase announcement followed by actual repurchase

Replication: EM around share repurchase (Table 12)

UEXAC	Mean	T-stat	No. of Firms
UEXAC_MJT	-0.57	(-2.24)*	1050
UEXAC_PMJT	-1.08	(-3.35)**	1048
UEXAC_DDM	0.22	(0.96)	440
UEXAC_ΔXFIN	0.74	(1.85)	1005
UEXAC_ ΔDebt	0.57	(1.35)	1047

1. Consistent with -0.57% reported in Gong et al. (2008)
2. No EM based on DDM but the sample size reduces!
3. Evidence of EM disappear when controlling for ΔXFIN (Debt financing)

Replication: EM around share repurchase (Table 12)

	Based on ΔDebt breakpoints	UEXAC_ MJT	UEXAC_ PMJT	UEXAC_ DDM	UEXAC_ ΔXFIN	UEXAC_ ΔDebt
Q1	Mean	-1.85	-1.56	-0.02	0.45	1.11
	T-stat	(-3.01)**	(-2.08)*	(-0.04)	(0.51)	(1.03)
	No. of Firms	235	235	103	225	232
Q2	Mean	-1.17	-2.11	-0.28	2.01	1.09
	T-stat	(-2.50)*	(-3.21)**	(-0.74)	(2.51)*	(1.38)
	No. of Firms	269	268	122	252	269
Q3	Mean	-0.88	-1.07	0.13	0.06	-0.28
	T-stat	(-1.89)	(-2.18)*	(0.25)	(0.09)	(-0.37)
	No. of Firms	281	281	101	270	281
Q4	Mean	1.47	0.66	1.04	0.45	0.47
	T-stat	(2.96)**	(0.92)	(2.87)**	(0.53)	(0.60)
	No. of Firms	265	264	114	258	265

Earnings Management vs. Estimation Errors: Which is the more plausible explanation?

> Challenge to EM around XFIN? If not, then why:
  - The quartile with low (high) ΔXFIN are found to have income-decreasing (income-increasing) EM? Why so pervasive?
  - EM is shown in the ***current period*** rather than the period ***before*** XFIN!
  - Economically significant?
  - EM more evident for ΔDebt rather than ΔEquity

> If EM, then
  - Any underlying common firm characteristics (i.e., incentives)?
  - Evidence driven by a single type of XFIN event? No!

> If not EM, more replications on existing studies?

Conclusions

> Managers' "normal" operating decisions associated with ΔXFIN are likely to induce measurement errors in UEXAC, and thus lead to potentially incorrect conclusion about presence of EM

> Controlling for ΔXFIN is important when PART is supposed to be weakly correlated with ΔXFIN, while in fact the sample contains a significant portion of firms with large ΔXFIN

> Matching on industry and ΔXFIN is best approach, but DDM method does surprisingly well!