Pricing of Accounting Accruals Information and the Revisions of Analyst Earnings Forecasts: Evidence from Tokyo Stock Exchange Firms

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Research Purposes

- The market pricing of the components of accounting accruals information for the firms listed in the Tokyo Stock Exchange.

- The relationship between the pricing of accounting accruals and the revisions of analyst earnings forecasts.

Pricing of the Components of Accruals

- Sloan (1996) is the pioneer work on this problem.
  – Accruals are less persistent than cash flow.
  – Stock market overprices accruals.
- Xie (2001) focuses on abnormal accruals
  – Abnormal accruals are the least persistent
  – Market overprices abnormal accruals to a greater extent than normal accruals.
- Desai et al. (2004) examine the relationship between accruals anomaly and value premium.
  – Accruals are associated with the stock returns after controlling for the value/growth characteristics.

Financial Analysts and Accruals

- Stober (1992), Abarbanell, and Bushee(1997)
  – Financial analysts do not fully impound the accounting information into their earnings forecasts.
- Barth and Hutton (2004) show that:
  – The revisions of the analyst forecast are positively related to the current year's accruals.
  – But these revisions do not reflect the reversals of the accruals on average.
- → Findings in the previous studies suggest the existence of the market inefficiency and optimism of analysts' forecasts.
- Question: *Whether is this also the case for the financial analysts in Japan?*

Hypothesis Development

- We hypothesize that the accruals anomaly is a universal phenomenon that is observed among the developed capital markets like the one in Japan.

- H0: (Basic Maintained Hypothesis)
  – Both the investors and the analysts fail to distinguish the level of the accruals and its impact upon the reported earnings around the initial announcement months and they begin to recognize the real implications of the accruals around future earnings announcement months.

Research Purposes and Six Operational Hypothesis

- After we provide the basic maintained hypothesis, H0. Then, we decompose H0 into six operational forms.

H0

- *Market pricing of the components of accounting accruals information for the firms listed in the Tokyo Stock Exchange.*

H1, H2, H3

- *The relationship between the pricing of accounting accruals and the revisions of analyst earnings forecasts.*

H4, H5, H6

Predictability of Stock Returns

- H1: The future stock returns are predictable by the accruals components of the current earnings for Japanese firms.

→ Regression Analysis

- H2: A trading strategy which takes a long position in the stock of the firms reporting lower level of the accruals and a short position in the stock of the firms reporting higher level of the accruals can generate the positive stock returns for Japanese firms.

→ Portfolio Formation Method

- H3: The positive stock returns documented in H2 are concentrated around the months of future earnings announcements.

→ Analysis on Month by Month Return Spreads

Analysts' Forecast Revisions

- H4: The probability that the financial analysts revise their original earnings forecasts downward (upward) is greater for the firms with the highest (lowest) abnormal accruals, relative to the firms with the lowest (highest) abnormal accruals.

- H5: The probability of the downward (upward) forecasts revisions for the firms with highest (lowest) abnormal accruals is larger than for the firms with lower (higher) abnormal accruals when the future earnings are realized to be lower (higher) than was originally expected.

Earnings Management and Forecast Revision

- H6: The magnitude of *ABNAC* for the firms for which analysts revise downward their earnings forecasts is larger than for the firms for which analysts upward their earnings forecasts.

Relationship between the magnitude of ABNAC and the analysts' forecast revisions

Basic Framework of Our Study on the Market Pricing of Components of Accounting Accruals

- Three Steps: Decomposition, Regression Analysis, and Portfolio Formation

Decomposing Accruals
Current vs. Non-Current
Asset vs. Liability
Normal vs. Abnormal

→

(H1)
Regression Analysis
OLS
with actual value
with ranking measure within deciles

Fama-MacBeth(1973) Regression Analysis

To test whether the accruals components have an additional explanatory power for the future stock returns.

→

(H2, H3)
Portfolio Formation
Single sort by the components of accruals

Two-stage sequential sort

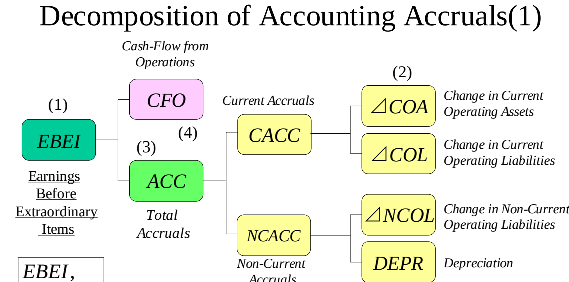
To examine the details of the return spread behavior.

The Pricing of Accruals and the Revisions of Analyst Earnings Forecasts

- Investigation of the month-by-month return spread to test the pricing processes of abnormal accruals.
- The result shows that the mispricing of abnormal accruals gets corrected as soon as the subsequent earning information becomes publicly available.

- We analyze the earnings forecasts revisions
  - To test whether financial analysts fail to analyze correctly the implications of the abnormal accruals.
  - To test whether analysts can revise their forecasts correctly when the subsequent earning information becomes publicly available.

Decomposition of Accounting Accruals(1)



$EBEI$, ΔCOA, ΔCOL, $\Delta NCOL$, $DEPR$ →

$CACC = \Delta COA + \Delta COL$
$NCACC = \Delta NCOL + DEPR$
$ACC = CACC + NCACC$

→ $CFO = EBEI - ACC$

All variables are standardized by their total assets.

Decomposition of Accounting Accruals(2)

- $ACC = NAC + ABNAC$
- Previous studies: Kasznik (1999), Dechow (2000)
- Cross-sectional CFO modified Jones model

$$ACC_{j,t} = \underbrace{\alpha_j + \beta_{1,j}(\Delta REV_{j,t} - \Delta REC_{j,t}) + \beta_{2,j} PPE_{j,t} + \beta_{3,j}\Delta CFO_{j,t}}_{NAC} + \underbrace{\varepsilon_{j,t}}_{ABNAC}$$

where $\Delta REV = \Delta(\text{Sales revenue})$,

$\Delta REC = \Delta(\text{Accounting receivables})$,

$PPE = \text{Gross property, plant, and equipment}$.

Sample and Data

- Non-financial firms listed in the first section of the TSE, whose fiscal year end on March 31.
- Data is pooled staring from 1980 till 2002, resulting in 16,181 firm-year observations.
- Accounting data:
  - Nikkei NEEDS Database by Nihon Keizai Shinbun Inc.
- Market Attributes Data (Stock Return etc.):
  - Nikkei Portfolio Master Database by Nikkei Media Marketing, Co., Ltd.
- Analyst Earnings Forecast Data:
  - ToyoKeizai Estimate Data by Toyo Keizai, Inc.

Descriptive Statistics

- The statistics look similar to those of Richardson et al.(2001) and Xie (2001).
- ACCs average is negative due to the high depreciation expenses among Japanese firms.

	Mean	S.D.	1st Qu.	Median	3rd Qu.
EBEI	1.941	2.644	0.771	1.744	3.114
CFO	4.725	6.504	1.255	4.557	7.926
ACC	-2.784	6.130	-5.733	-2.701	0.374
ΔCOA	0.906	7.342	-2.572	0.892	4.711
ΔCOL	-0.472	5.654	-3.094	-0.402	2.033
ΔNCOL	-0.217	1.349	-0.448	-0.118	0.123
DEPR	-3.001	2.251	-4.065	-2.655	-1.411
CACC	0.434	5.525	-2.038	0.435	3.020
NCACC	-3.218	2.650	-4.381	-2.849	-1.474
NAC	-2.784	5.085	-5.346	-2.700	-0.055
ABNAC	0.000	3.423	-1.837	0.013	1.883
LnMV	11.151	1.379	10.181	11.047	12.030
BPR	60.728	55.527	29.601	48.037	74.039
CRR	6.296	42.291	-20.979	0.255	24.810
CAR	0.382	3.023	-1.319	0.061	1.680

All variables except for LnMV are standardized by their total assets, and in %.

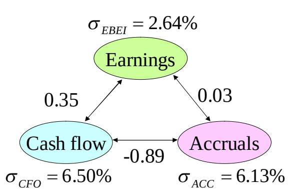
Correlation Matrix

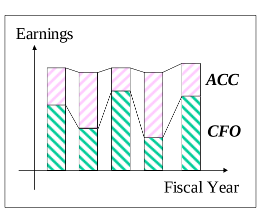
- Pearson correlations are reported in the upper triangular matrix and Spearman rank correlations are reported in the lower triangular matrix.

	EBEI	*CFO*	*ACC*	*ΔCOA*	*ΔCOL*	*ΔNCOL*	*DEPR*	*CACC*	*NCACC*	*NAC*	*ABNAC*
EBEI		0.349	0.031	0.207	-0.174	-0.261	-0.092	0.116	-0.173	-0.022	0.075
p-value		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.000
CFO	0.341		-0.889	-0.392	-0.163	-0.195	-0.396	-0.732	-0.449	-0.726	-0.441
p-value	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ACC	0.070	-0.914		0.527	0.095	0.099	0.406	0.863	0.427	0.777	0.527
p-value	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ΔCOA	0.218	-0.440	0.561		-0.657	-0.265	0.041	0.615	-0.037	0.401	0.310
p-value	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000	0.000
ΔCOL	-0.151	-0.205	0.152	-0.667		0.276	-0.042	0.088	0.046	0.066	0.066
p-value	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000
ΔNCOL	-0.194	-0.286	0.220	-0.132	0.163		0.068	-0.086	0.396	0.071	0.065
p-value	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000
DEPR	-0.026	-0.367	0.378	0.021	-0.021	0.023		0.009	0.905	0.406	0.098
p-value	0.001	0.000	0.000	0.009	0.009	0.004		0.259	0.000	0.000	0.000
CACC	0.135	-0.795	0.902	0.647	0.137	-0.009	0.006		-0.012	0.631	0.515
p-value	0.000	0.000	0.000	0.000	0.000	0.260	0.421		0.115	0.000	0.000
NCACC	-0.121	-0.457	0.433	-0.050	0.065	0.528	0.861	0.001		0.414	0.121
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.913		0.000	0.000
NAC	-0.025	-0.792	0.830	0.433	0.139	0.201	0.377	0.718	0.422		-0.044
p-value	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000		0.000
ABNAC	0.162	-0.460	0.558	0.362	0.065	0.097	0.117	0.548	0.148	0.000	
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.000	

Evidence of Income Smoothing

- Earnings volatility is much smaller than those of cash-flows and accruals.
- There exists a very strong and negative correlation between cash-flows and accruals.
- The managers may engage in earnings management behavior through some kind of income smoothing scheme.





OLS Regression Analysis

- We observed negative correlation between CFOs and ACCs.
- To avoid the multicolinearity problem, we dropped CFOs from regression equations.
- We run the OLS regressions to find out the explanatory power of the accruals components on the future abnormal stock returns.

Model1 :

$$CAR_{jt} = \gamma_0 + \gamma_1 ACC_{jt} + \varepsilon_{jt},$$

Model2 :

$$CAR_{jt} = \gamma_0 + \gamma_1 \Delta COA_{jt} + \gamma_2 \Delta COL_{jt} + \gamma_3 \Delta NCOL_{jt} + \gamma_4 DEPR_{jt} + \varepsilon_{jt},$$

Model3 :

$$CAR_{jt} = \gamma_0 + \gamma_1 CACC_{jt} + \gamma_2 NCACC_{jt} + \varepsilon_{jt},$$

Model4 :

$$CAR_{jt} = \gamma_0 + \gamma_1 NAC_{jt} + \gamma_2 ABNAC_{jt} + \varepsilon_{jt}.$$

Definition of Abnormal Returns

- We use Fama and French 3 factor model as a benchmark. (Fama and French(1993))
- The very strong performance of FF3 in describing asset returns not only for U.S. data but also for Japanese data brings about more and more application of it in the real world.
- CAR (Cumulative Abnormal Return)
  = Annualized Jensen's alpha which is measured based on FF3.

$$r_{jk} - r_{fk} = \alpha_{jt} + \beta^{M}_{jt}(r_{Mk} - r_{fk}) + \beta^{SMB}_{jt} SMB_k + \beta^{HML}_{jt} HML_k + \eta_{jk},$$

Jensen's alpha

$$k = 12(t-1)+1,\ldots,12t.$$

12 monthly observations.

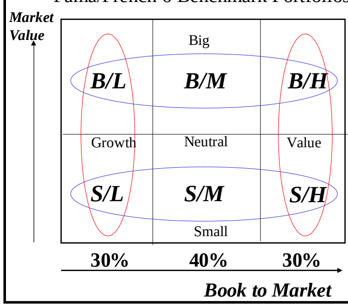
$$\Downarrow$$

$$CAR_{jt} = 12 \cdot \alpha_{jt}$$

Fama-French's 3 factor model (1993, *JFE*)

$$\underbrace{r_{i,t} - r_{f,t} = \alpha_i + \beta^{VW}_i (r_{M,t} - r_{f,t})}_{\text{CAPM}} + \beta^{SMB}_i \underbrace{SMB_t}_{\text{Small Cap.}} + \beta^{HML}_i \underbrace{HML_t}_{\text{Value Stock}} + \varepsilon_{i,t}$$

Fama/French 6 Benchmark Portfolios



Fama/French Benchmarks Factors

r_M = value-weighted market return

$$SMB = \frac{1}{3}(S/H + S/M + S/L) - \frac{1}{3}(B/H + B/M + B/L)$$

$$HML = \frac{1}{2}(S/H + B/H) - \frac{1}{2}(S/L + B/L)$$

OLS Regression Results

- We use pooled data of 16,181 firm-year observations from 1980 to 2003.
- The result shows that the components of the accruals have incremental explanatory power on the future stock returns.

Table 3. Panel A. Regressions using actual values

	Alpha	*ACC*	*ΔCOA*	*ΔCOL*	*ΔNCOL*	*DEPR*	*CACC*	*NCACC*	*NAC*	*ABNAC*	Adj-Rsq
Coef	9.588	-6.081									0.0021
p-val	0.000	0.000									
Coef	13.008		-6.147	0.122	-3.656	-3.240					0.0028
p-val	0.000		0.000	0.934	0.001	0.003					
Coef	11.019						-4.651	-4.291			0.0021
p-val	0.000						0.000	0.000			
Coef	10.898								-5.173	-3.528	0.0019
p-val	0.000								0.000	0.001	

Fama-MacBeth Regression

- To confirm the robustness of the results we have obtained in the OLS regression analysis, we conduct Fama-MacBeth regression by using monthly return observations.

$$R_{jk} - R_{fk} = \alpha_{jt} + \beta^{M}_{jt}(R_{Mk} - R_{fk}) + \beta^{SMB}_{jt} SMB_k + \beta^{HML}_{jt} HML_k + \eta_{jk},$$

$$k = 12(t-1)+1,\ldots,12t.$$

Residual Returns

Model1 :

$$\alpha_{jt} + \eta_{jk} = \gamma_0 + \gamma_1 ACC_{jt} + \varepsilon_{jk},$$

Model2 :

$$\alpha_{jt} + \eta_{jk} = \gamma_0 + \gamma_1 \Delta COA_{jt} + \gamma_2 \Delta COL_{jt} + \gamma_3 \Delta NCOL_{jt} + \gamma_4 DEPR_{jt} + \varepsilon_{jk},$$

Model3 :

$$\alpha_{jt} + \eta_{jk} = \gamma_0 + \gamma_1 CACC_{jt} + \gamma_2 NCACC_{jt} + \varepsilon_{jk},$$

Model4 :

$$\alpha_{jt} + \eta_{jk} = \gamma_0 + \gamma_1 NAC_{jt} + \gamma_2 ABNAC_{jt} + \varepsilon_{jk},$$

Results of Fama-MacBeth Regression Analysis

- Sample Period: 07/1980-06/2003. The regression coefficients are the average of 276 estimated parameters.
- The decomposition of the total accruals into NAC and ABNAC help identify the source of the value relevance contained in the accounting accruals.

	Alpha	*ACC*	*ΔCOA*	*ΔCOL*	*ΔNCOL*	*DEPR*	*CACC*	*NCACC*	*NAC*	*ABNAC*	*Adj-Rsq*
Coef	0.358	-0.010									0.0029
p-val	0.000	0.030									
Coef	0.330		-0.015	-0.007	-0.004	-0.009					0.0152
p-val	0.000		0.006	0.276	0.911	0.549					
Coef	0.382						-0.010	-0.004			0.0077
p-val	0.000						0.049	0.772			
Coef	0.388								0.001	-0.035	0.0051
p-val	0.000								0.852	0.000	

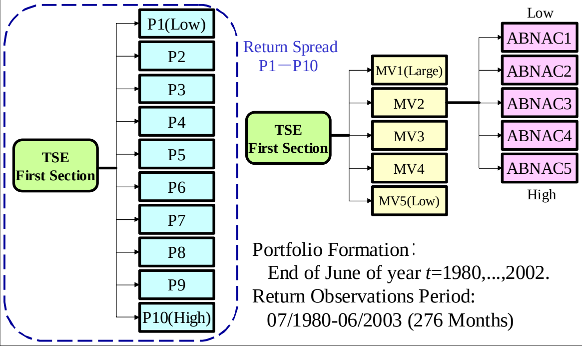
Summary of Regression Analysis

- Total accruals, change in current operating assets, current accruals, and abnormal accruals have incremental explanatory powers with respect to future abnormal stock returns.
- It implies that the future stock returns are partially predictable by using the current total accruals and their components.

- The evidence supports our first hypothesis, H1.

Portfolio Formation Method (1)

- We examine the profitability of the trading strategy based on the components of accruals



Portfolio Formation：
End of June of year *t*=1980,...,2002.
Return Observations Period:
07/1980-06/2003 (276 Months)

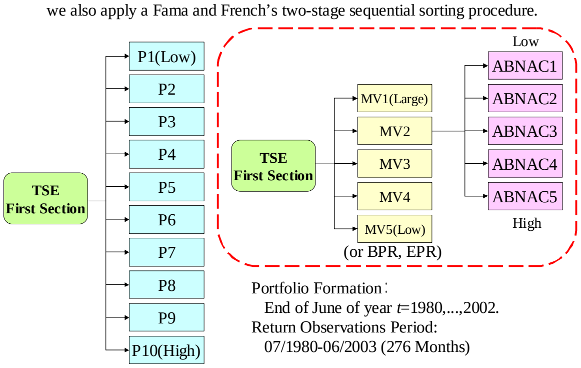
Average Monthly Returns of Ranked Portfolios

- Return spread of ACC is 0.226% p. m. (Sig. at 8%)
- Return spread of ABNAC is 0.275% p. m. (Sig. at 3%)
- Trading strategies based on ACC and ABNAC can generate positive returns and they are statistically and economically significant.

	LnMV	*BPR*	*ACC*	*Δ COA*	*ΔCOL*	*ΔNCOL*	*DEPR*	*CACC*	*NCACC*	*NAC*	*ABNAC*
P1	1.47	1.28	0.85	0.90	0.68	0.92	0.87	0.79	0.85	0.80	0.94
P2	1.05	1.13	0.84	0.92	0.60	0.76	0.76	0.95	0.83	0.78	0.82
P3	0.80	0.92	0.93	0.93	0.59	0.71	0.82	0.83	0.76	0.78	0.87
P4	0.77	0.90	0.83	0.84	0.80	0.74	0.77	0.86	0.83	0.83	0.94
P5	0.64	0.86	0.87	0.90	0.88	0.68	0.90	0.81	0.87	0.91	0.75
P6	0.66	0.82	0.83	0.80	0.86	0.75	0.81	0.85	0.76	0.81	0.79
P7	0.66	0.56	0.75	0.79	0.88	0.71	0.78	0.79	0.69	0.83	0.71
P8	0.67	0.60	0.69	0.69	0.90	0.77	0.78	0.76	0.80	0.85	0.74
P9	0.61	0.53	0.74	0.60	0.92	0.84	0.76	0.67	0.81	0.70	0.73
P10	0.62	0.35	0.62	0.56	0.83	1.06	0.69	0.64	0.73	0.66	0.66
P1-P10	0.85	0.94	0.23	0.35	-0.16	-0.15	0.18	0.15	0.12	0.14	0.28
t -value	1.96	3.47	1.78	1.61	-0.77	-0.80	0.74	0.97	0.51	1.18	2.27
p -value	0.05	0.00	0.08	0.11	0.44	0.42	0.46	0.33	0.61	0.24	0.02

Portfolio Formation Method (2)

- To examine the value relevance after controlling the firms' characteristics, we also apply a Fama and French's two-stage sequential sorting procedure.



Portfolio Formation：
End of June of year *t*=1980,...,2002.
Return Observations Period:
07/1980-06/2003 (276 Months)

Return Analysis of Two-Stage Ranked Portfolios

- Average return spreads are all positive without exceptions.
- Abnormal accruals based trading strategy generates positive returns even after controlling for firm's size, BPR, and EPR characteristics. (H2)

		P1	P2	P3	P4	P5	Ave. Spr.	*t* -value	*p* -value
	Large	0.564	0.615	0.666	0.643	0.562	0.002	0.016	0.987
		0.784	0.741	0.703	0.635	0.462	0.322	1.916	0.056
LnMV	Mid.	0.715	0.746	0.718	0.573	0.478	0.236	1.395	0.164
		0.938	0.756	0.703	0.799	0.714	0.224	1.315	0.190
	Small	1.417	1.489	1.202	1.008	1.155	0.262	1.191	0.235
	Value	1.298	1.165	1.291	1.056	1.214	0.084	0.427	0.670
		0.864	1.075	0.915	0.895	0.762	0.102	0.683	0.495
BPR	Neutral	0.889	1.017	0.927	0.666	0.665	0.224	1.201	0.231
		0.672	0.791	0.481	0.418	0.555	0.117	0.724	0.470
	Growth	0.551	0.415	0.315	0.402	0.480	0.071	0.326	0.745
	High	0.911	0.950	0.951	0.861	0.824	0.087	0.469	0.639
		0.901	0.980	0.817	0.675	0.775	0.126	0.828	0.408
EPR	Mid.	0.713	0.954	0.731	0.701	0.568	0.145	0.870	0.385
		0.680	0.781	0.622	0.753	0.605	0.075	0.406	0.685
	Low	1.019	0.935	0.812	0.671	0.601	0.418	1.988	0.048

Month-by-Month Return Spread Behavior

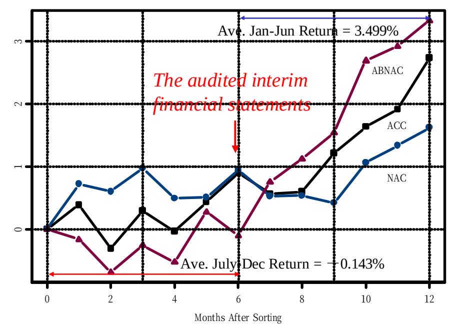
- The investors overestimate the implications of the accruals information around the time when it gets publicly released.
- The firms' stock whose abnormal accruals are large (small) is overpriced (underpriced) initially.
- Will the mispricing phenomenon correct itself as the months elapse and the information on the future earning become available?

Question: Will the mispricing phenomenon correct itself as the months elapse?

- We report the return spread behavior for every month to explore whether the significant return spread is clustered around the future earnings announcement months.

		Jul	Aug	Sep	Oct	Nov	Dec	Jul-Dec
ACC	Ave.	0.39	-0.70	0.61	-0.33	0.47	0.46	0.83
	p-value	0.66	0.03	0.47	0.17	0.60	0.46	0.59
NAC	Ave.	0.72	-0.12	0.37	-0.48	0.02	0.44	0.91
	p-value	0.15	0.50	0.58	0.19	0.75	0.29	0.91
ABNAC	Ave.	-0.16	-0.53	0.44	-0.27	0.81	-0.38	-0.14
	p-value	0.33	0.02	0.76	0.15	0.29	0.09	0.11
		Jan	Feb	Mar	Apr	May	Jun	Jan-Jun
ACC	Ave.	-0.33	0.03	0.61	0.42	0.27	0.81	1.85
	p-value	0.34	0.71	0.41	0.74	0.91	0.22	0.74
ΔCOA	Ave.	1.28	1.34	0.79	0.28	1.68	1.64	7.33
	p-value	0.36	0.20	0.60	0.93	0.09	0.06	0.07
NAC	Ave.	-0.42	0.01	-0.11	0.64	0.27	0.29	0.70
	p-value	0.22	0.71	0.53	0.35	0.76	0.74	0.94
ABNAC	Ave.	0.86	0.37	0.41	1.13	0.22	0.40	3.50
	p-value	0.23	0.81	0.79	0.06	0.90	0.74	0.24

Question: Will the mispricing phenomenon correct itself as the months elapse?



Summary of the Spread Behavior Analysis

- The mispricing phenomenon caused by the misinterpretation of the abnormal accruals information gets corrected after January of the subsequent year.
- The audited interim financial statements of our sample firms are disclosed between November and December.
- We can interpret that the positive returns from the ABNAC based trading strategy are mainly concentrated in the months when the future earnings information become publicly available.
- These evidences support our third hypothesis (H3).

Analysts Earnings Forecasts and ABNAC Anomaly

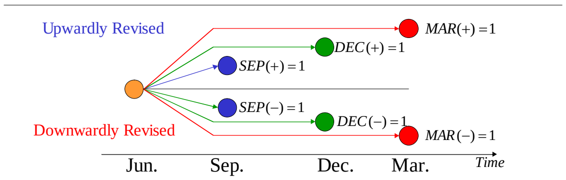
- The stock market misprices the abnormal accruals information during the portfolio formation months.
- Do financial analysts fail to correctly analyze the implications from the abnormal accruals information ?
- We investigate the relationship between the abnormal accruals and the revisions of analyst earnings forecasts.

Definition of Upward and Downward Revision

$$SEP(+) = \begin{cases} 1 \text{ if } EF_{SEP} > EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases}, \quad SEP(-) = \begin{cases} 1 \text{ if } EF_{SEP} < EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases},$$

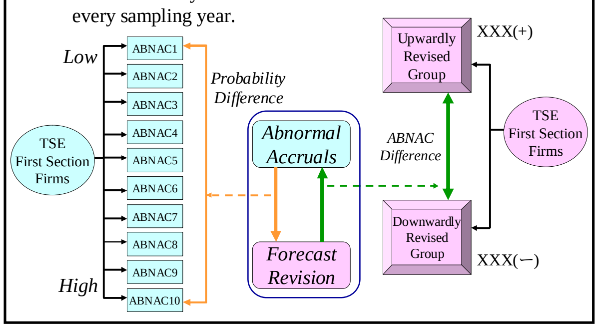
$$DEC(+) = \begin{cases} 1 \text{ if } EF_{DEC} > EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases}, \quad DEC(-) = \begin{cases} 1 \text{ if } EF_{DEC} < EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases},$$

$$MAR(+) = \begin{cases} 1 \text{ if } EF_{MAR} > EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases}, \quad MAR(-) = \begin{cases} 1 \text{ if } EF_{MAR} < EF_{JUN} \\ 0 \quad \text{otherwise} \end{cases}.$$



Direction of the Earnings Forecast Revisions vs. the Magnitude of Abnormal Accruals

- We examine the relationship between our earnings forecast revision dummy variables and the abnormal accruals for every sampling year.



Forecast Revisions for ABNAC Ranked Portfolios

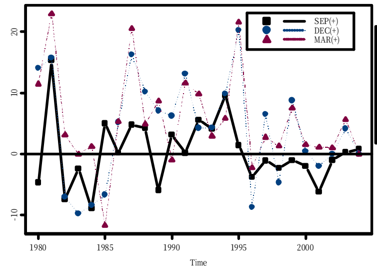
- The earnings forecasts for the firms with lower (higher) abnormal accruals are revised more frequently upward (downward) than the firms with higher (lower) abnormal accruals.

		SEP(+)	SEP(-)	DEC(+)	DEC(-)	MAR(+)	MAR(-)
Low	P1	14.08	20.03	34.29	41.54	35.67	47.70
ABNAC	P2	15.78	19.76	35.69	39.79	35.51	45.71
	P3	15.74	21.48	36.46	41.64	35.86	46.81
	P4	15.01	20.19	35.49	41.34	35.64	47.11
	P5	14.71	23.16	32.14	42.82	32.09	50.03
	P6	16.00	21.45	33.39	41.57	33.62	47.57
	P7	15.33	20.95	34.57	40.80	34.57	46.36
	P8	14.19	21.91	32.32	42.02	32.52	48.15
High	P9	14.18	21.29	33.20	41.15	33.09	47.78
ABNAC	P10	13.79	21.84	30.16	46.05	29.99	51.66
Spread	P1-P10	0.29	-1.81	4.13	-4.51	5.68	-3.96

(in per cent)

Year by Year Patterns of the Probability Differences
Upwardly Revised Dummy Variables

- The differences between P1 and P10 are more often positive.

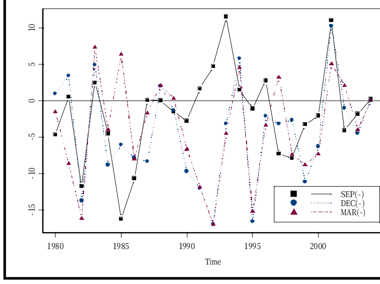


	Pooled Data	Probability Value
SEP(+)	0.292	0.808
DEC(+)	4.126	0.036
MAR(+)	5.678	0.003

The difference is significant at 5% level in December and March.

Year by Year Patterns of the Probability Differences
Downwardly Revised Dummy Variables

- The differences between P1 and P10 are more often negative.
- We conclude that the most significant revisions occur near March; i.e., the end of next accounting period.

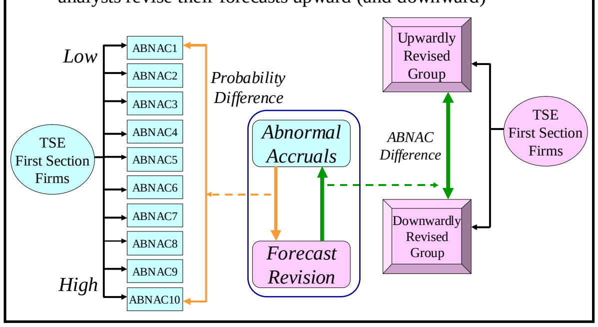


Again, the difference of probability is significant at 5% level in December and March.

	Pooled Data	Probability Value
SEP(−)	-1.811	0.196
DEC(−)	-4.514	0.007
MAR(−)	-3.962	0.015

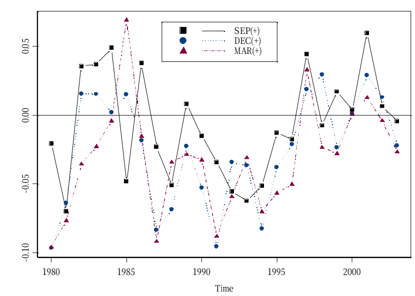
Direction of the Earnings Forecast Revisions vs. the Magnitude of Abnormal Accruals

- We compute the average of ABNACs for the firms for which analysts revise their forecasts upward (and downward)



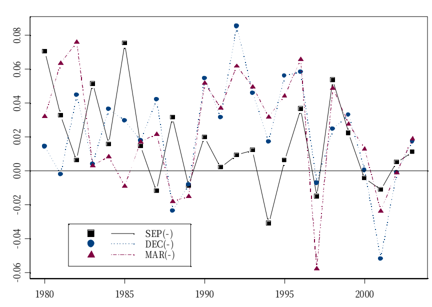
Time-Series of Abnormal Accruals
Firms in Upwardly Revised Group

- As for the firms for which the analysts revise their earnings forecast upward, the abnormal accruals are for most of the cases negative for September, December and March revisions.

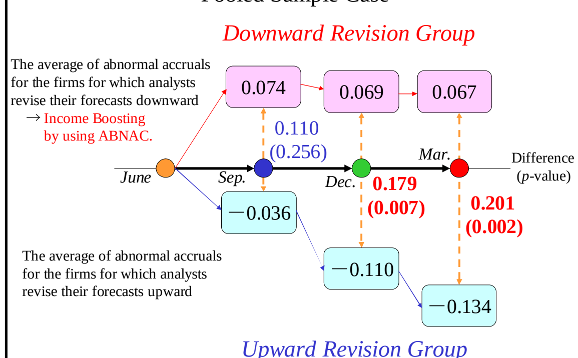


Time-Series of Abnormal Accruals
Firms in Downwardly Revised Group

- In contrast, for the firms for which analysts revise their forecasts downward, they are positive for most of the cases.



ABNAC Difference and Earnings Forecast Revisions
Pooled Sample Case



Summary of the Analysts Forecasts Analysis

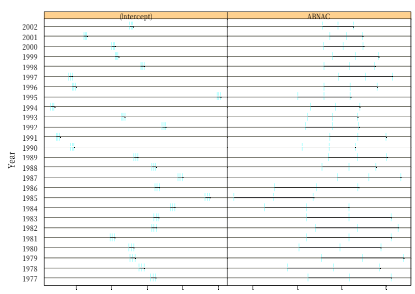
- The annual earnings forecasts for the firms with higher (lower) abnormal accruals are revised more downwardly (upwardly) than the firms with lower (higher) abnormal accruals. (H4)
- The probability of downward (upward) forecasts revisions for the firms with the highest (lowest) abnormal accruals increases when the subsequent year's earnings are realized to be lower (higher) than has been originally expected. (H5)
- ABNAC for the firms for which analysts revise downward their earnings forecasts is larger than the one for the firms for which the analysts do upward. (H6)

Conclusion

- Both the investors and the analysts fail to distinguish the level of the accruals and their impact upon the reported earnings in the initial announcement months, and they begin to recognize the real implications of the accruals around future earnings announcement months.
- Future stock returns are partially predictable by the accruals components, and the Japanese stock market misprices the abnormal accruals information initially in the portfolio formation year.

Time Variation of Parameters

- Intercept term is not stable across time



Explanation of Low R-squared

- Regression analysis by using pooled data