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Stock Returns, Earnings Classification and Persistence

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Table 1 Extent of Extraordinary Items (EI) Reporting for the period 1960-1987

	no of Emiliariania		ZI) Report	<u> </u>	CICA Survey
	S'	(300-325 firms)			
	Total number	Total % of firms			
Year	of firms	+EI	-EI	EI	reported EI
1960	57	3.51	0.00	3.51	N/A
1961	58	5.17	0.00	5.17	N/A
1962	64	7.81	1.56	9.37	N/A
1963	70	4.29	1.43	5.72	N/A
1964	73	1.37	0.00	1.37	N/A
1965	75	1.33	1.33	2.66	N/A
1966	75	2.67	2.67	5.34	N/A
1967	75	13.33	1.33	14.66	N/A
1968	75	17.33	2.67	20.00	N/A
1969	75	24.00	9.33	33.33	28
1970	75	18.67	21.33	40.00	36
1971	75	22.67	12.00	34.67	35
1972	75	21.33	14.67	36.00	38
1973	75	24.00	6.67	30.67	37
1974	75	26.67	8.00	34.67	34
1975	75	21.33	16.00	37.33	33
1976	75	28.00	6.67	34.67	38
1977	75	20.00	16.00	36.00	32
1978	75	29.33	8.00	37.33	38
1979	75	28.00	8.00	36.00	34
1980	75	22.67	14.67	37.34	31
1981	75	32.00	13.33	45.33	36
1982	75	18.67	18.67	37.34	32
1983	75	22.67	8.00	30.67	36
1984	75	17.33	14.67	32.00	37
1985	75	17.33	20.22	37.33	38
1986	75	25.33	17.33	42.66	44
1987	75	22.67	14.66	37.33	39

 $\begin{tabular}{ll} Table 2 \\ Summary of firm specific time series structure identification \\ \end{tabular}$

		Earnings before	Earnings after	Extraordinary
		extraordinary items	extraordinary items	Items
ARIMA mode	els	BEPS	AEPS	EI
Random	$x_t = \alpha + \varepsilon_t$	11	19	54
AR1	$x_t = \alpha + \phi x_{t-1} + \varepsilon_t$	44	35	14
Random walk	$x_t = \alpha + x_{t-1} + \varepsilon_t$	10	9	0
MA1	$x_t = \alpha + \varepsilon_t - \theta \varepsilon_{t-1}$	6	6	7
AR2	$x_t = \alpha + \phi_1 x_{t-1} + \phi_2 x_{t-2} + \varepsilon_t$	3	4	0
AR3	$x_t = \alpha + \phi_1 x_{t-1} + \phi_2 x_{t-2} + \phi_3 x_{t-3} + \varepsilon_t$	0	1	0
MA2	$x_t = \alpha + \varepsilon_t - \theta_1 \varepsilon_{t-1} - \theta_2 \varepsilon_{t-2}$	1	1	0
	Total	75	75	75

Table 3 Summary statistics of persistence measures

Panel A: t-test, $H_0: \mu = 0 \ vs. \ H_1: \mu \neq 0$											
	Mean	Std.Dev	t-ratio	p-value							
APM_{FS}	2.707	2.962	7.91	.000							
BPM_{FS}	3.241	3.041	9.23	.000							
BPM_{210}	6.676	4.029	14.35	.000							
$BPM_{FS} - APM_{FS}$	0.535	1.854	2.50	.015							
$BPM_{210} - BPM_{FS}$	3.434	3.915	7.60	.000							
Panal R · Paarson C	orrolation	c Coofficion	te								

Panel B: Pearson Correlation's Coefficients

	APM_{FS}	BPM_{FS}
BPM_{FS}	0.810	
BPM_{210}	0.372	0.414

 APM_{FS} , produced from firm specific (FS) ARIMA model, is the persistence measure for AEPS, earnings after extraordinary items.

Similarly BPM_{FS} is the persistence measure for BEPS, earnings before extraordinary items produced from firm specific (FS) ARIMA models.

Whereas BPM_{210} is the persistence measure for BEPS produced from a standard ARIMA(2,1,0) model.

Table 4 Explanatory power, adjusted R^2 , of returns-earnings regression of different window lengths

	Not a	djusted for pers	istence	Adjusted for persistence							
				Fir	m specific ARIMA	ARIMA(2,1,0)					
	AES	BES + EI	BES	AES^a	$BES^a + EI$	BES^a	$BES^a + EI$	BES^a			
Model	M1	M2	M3	M4	M5	M6	M5'	M6'			
$CAR_{-5,+5}$	0.4	8.3	9.6	0.7	7.6	8.8	10.1	11.3			
$CAR_{-2,+2}$		5.6	6.6	1.6	6.3	6.9	6.5	7.3			
$CAR_{-1,+1}$	6.3	16.7	17.4	7.0	16.3	16.1	19.8	19.8			
$CAR_{0,+1}$	5.8	13.7	13.9	6.3	12.2	11.4	17.2	16.6			
$CAR_{0,+1}$	4.8	6.4	5.9	5.0	9.5	8.1	7.5	6.3			
$CAR_{0,+2}$	2.0	2.0	3.2	2.2	4.1	5.1	2.1	3.2			

All R^2 s are in percentages.

 $CAR_{n1,n2}$ are abnormal stock returns cumulated over the period n1 to n2 days around earnings announcement date. AES, BES and EI are respectively earnings surprises for AEPS and BEPS (earnings after and before extraordinary items) and extraordinary items.

Superscript 'a' indicates adjusted for earnings persistence.

Table 5 Detailed results of returns-earnings regression for $CAR_{-1,+1}$

Detailed results			00.11.11.00	0-0		 	1	
Panel A : Not	adjusted	l for	earnings p	ersis	stence			
$CAR_{-1,+1} =$	α	+	$\beta_1 AES$			F	p-value	$\mathrm{adj}R^2$
	.0055		.0087			6.00	.017	6.3%
	(1.53)		(2.45)					
$CAR_{-1,+1} =$	α	+	$\beta_1 BES$	+	$\beta_2 EI$			
	.0045		.0416		.0029	8.44	.001	16.7%
	(1.33)		(3.98)		(0.67)			
$CAR_{-1,+1} =$	α	+	$\beta_1 BES$					
, ,	.0048		.0422			16.55	.000	17.4%
	(1.41)		(4.07)					
Panel B : Adju		earı	,	sten	ce			
Panel B : Adju $CAR_{-1,+1} =$,	sten	ce	F	p-value	$\mathrm{adj}R^2$
v	sted for		nings persi	sten	ce	F 6.61	p-value .012	$\mathrm{adj}R^2 \ 7.0\%$
v	sted for α		nings persi $\beta_1 AES^a$	sten	ce		-	
$CAR_{-1,+1} =$	sted for α .0058	+	nings persi $\beta_1 A E S^a$ $.0039$ (2.57)				-	
v	sted for α .0058 (1.65)	+	nings persi $\beta_1 AES^a$.0039				-	
$CAR_{-1,+1} =$	sted for α .0058 (1.65) α	+	nings persi $\beta_1 AES^a$.0039 (2.57) $\beta_1 BES^a$		$eta_2 EI$	6.61	.012	7.0%
$CAR_{-1,+1} =$	sted for α .0058 (1.65) α .0034	+	nings persi $\beta_1 AES^a$.0039 (2.57) $\beta_1 BES^a$.0145		$\beta_2 EI$.0047	6.61	.012	7.0%
$CAR_{-1,+1} =$ $CAR_{-1,+1} =$	sted for α .0058 (1.65) α .0034 (0.97)	+	nings persi $\beta_1 AES^a$.0039 (2.57) $\beta_1 BES^a$.0145 (3.92)		$\beta_2 EI$.0047	6.61	.012	7.0% 16.3%
$CAR_{-1,+1} =$ $CAR_{-1,+1} =$	sted for α .0058 (1.65) α .0034 (0.97) α	+	nings persi $\beta_1 AES^a$.0039 (2.57) $\beta_1 BES^a$.0145 (3.92) $\beta_1 BES^a$		$\beta_2 EI$.0047	6.61 8.19	.012	7.0% 16.3%

t-ratios are in parentheses.

AES, BES and EI are, respectively, earnings surprise for earnings after and before extraordinary items and extraordinary items.

Superscript 'a' indicates adjusted for earnings persistence using persistence maesure computed from parameter estimated from firm specific ARIMA model.

Table 6
Results of returns-earnings regressions in respect of partitioned sample

CAP CAP											
	($CAR_{-1,+1}$	$= \alpha + \beta$	$BES + \varepsilon$		C	$AR_{-1,+1}$	$= \alpha + \beta I$	$ES^a + \varepsilon$		
N	α	β	F	p-value	$adjR^2$	α	β	F	p-value	$adjR^2$	
firms	reporting z	ero extrao	rdinary	items							
49	.0075	.0638	17 20	000	20 007	.0070	.0184	10.26	000	30.3%	
45	(1.99)	(4.16)	17.52	.000	20.070	(1.88)	(4.39)	19.20	.000	30.3 /0	
0.1	.0085	.0596	0.00	010	oc 107	.0091	.0218	0.20	010	26 707	
21	(1.26)	(2.84)	8.06	.010	26.1%	(1.37)	(2.88)	8.30	.010	26.7%	
99	.006	.0864	0.55	006	20 007	.0056	.0157	14.20	001	20 007	
22	(1.34)	(3.09)	9.55	.000	28.9%	(1.50)	(3.78)	14.30	.001	38.8%	
firms	reporting r	egative ex	traordin	ary items							
15	0073	.0116	0.94	620	0.007	0082	.0009	0.01	000	0.0%	
10	(0.82)	(0.49)	0.24	.029	0.070	(0.94)	(.09)	0.01	.920	0.070	
firms	reporting p	ositive ext	traordina	ary items							
17	.0039	.0391	2.04	066	15 507	.0041	.0136	2.64	105	0.207	
11	(0.46)	(1.99)	5.94	.000	13.3%	(0.46)	(1.62)	2.04	.123	9.3%	
	N firms 43 21 22 firms 15	$ \begin{array}{c c} N & \alpha \\ \hline N & \alpha \\ \hline firms reporting z \\ 43 & .0075 \\ (1.99) \\ 21 & .0085 \\ (1.26) \\ 22 & .006 \\ (1.34) \\ \hline firms reporting r \\ 15 &0073 \\ (0.82) \\ \hline firms reporting p \\ 17 & .0039 \\ \hline \end{array} $	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	

t-ratios are in parentheses. The total number of companies in the sample is 75. PM is the persistence measure. $CAR_{-1,+1}$ denotes cumulative abnormal returns over the period -1 to +1 days around the earnings announcement date. ES is the earnings surprise for the earnings before extraordinary items (EI). N is the number of firms in each sub-sample. Superscript "a" indicates that the earnings surprises are adjusted for earnings persistence using the persistence measure computed from parameters estimated from the firm specific ARIMA model.

Table 7
Results of returns and persistence adjusted earning regressions for the whole sample

		-		<u> </u>		0 0				
M6a	$CAR_{-1,+1} =$	α	+	$\beta_1 BES$	+	$\beta_2(BES \times BPM)$		F	p-value	$\operatorname{adj} R^2$
		.0043		.0341		.0054		8.43	.001	16.7%
		(1.25)		(2.11)		(0.66)				
		,		,		,				
M6b	$CAR_{-1,+1} =$	α	+	$\beta_1 BES$	+	$\beta_2(BES \times BPM \times D_F^0)$	$_{EI}^{0})$			
	-, , -	.0039		.0311		.0150	<i>517</i>	10.66	.000	20.7%
		(1.16)		(2.70)		(2.02)				
						\ /				

t-ratios in parentheses. BPM is the persistence measure for BEPS.

BES is the unexpected component of BEPS (earnings before extraordinary items).

 D_{EI}^0 is a $\{0,1\}$ dummy variable that takes the value of 1 for zero extraordinary items or 0 otherwise.