Replicating Brown and Sivakumar (2003)

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In this note, I replicate Brown and Sivakumar (2003)'s results.

1 Data

- I/B/E/S
  - Detail History Actuals, Unadjusted (ibes.actu_epsus):
    - rounded to 2 digits
  - Summary Statistics, Unadjusted (ibes.statsumu_epsus)
- Compustat
  - Fundamental Quarterly (comp.fundq)
- CRSP
  - Daily Stock (crsp.dsf)
  - Stock Market Indexes (crsp.dsi)
- Linking Tools:
  - IBES CRSP Link (wrdsapps.ibcrsphist):
    - score = 1
  - Compusta CRSP Linking History (crsp.ccmxpf_lnkhist):
    - linktype = LC or LU
    - linkprim = P

2 Results

2.1 Predictive ability

- There is a typo. In the note of Table 1, the authors write predictive error is measured as

$$Abs\{(STREET_t - STREET_{t-4}) - (EPSOP_t - EPSOP_{t-4})\}/PRCCQ_{t-1}.$$

However, then, predictive errors are always non-negative, and t-statistics for zero mean null hypothesis should be non-negative, which is contradiction with negative values for Group 3.

Table 1: Predictive ability evidence

(a) EPSOP and STREET Agree in Quarter t

group	N	param_stat	nonparam_stat
Group 1	7,142	12.15∗	0.54∗
Group 2	2,035	11.71∗	0.59∗
Group 3	1,762	-1.87∗∗	0.49
All	10,939	14.74∗	0.54∗

(b) EPSOP and STREET Disagree in Quarter t

group	N	param_stat	nonparam_stat
Group 1	7,547	20.43∗	0.59∗
Group 2	2,236	14.56∗	0.61∗
Group 3	1,263	2.63∗	0.5
All	11,046	24.43∗	0.59∗

- Hence, in this note, I assume predictive error is measured as

$$\Big[Abs\{(STREET_t - STREET_{t-4})\} - Abs\{(EPSOP_t - EPSOP_{t-4})\}\Big]/PRCCQ_{t-1}.$$

- Predictive errors are truncated at 2.5% and 97.5% when I compute t-statistics.
- See Table 1 for the results.

2.2 Valuation

- P_t, BV_t, $STREET_t$, $EPSOP_t$, and NI_t are truncated at 2.5% and 97.5%.
- See Table 2 for the results.

2.3 Information Content

- $UOPINC_{i,t}$ is truncated at 2.5% and 97.5%.
- See Table 3 and 4 for the results.

3 Conclusion

Overall, Brown and Sivakumar (2003)'s results are quite well replicated.

Table 2: Valuation evidence

(a) Group 1: $EPSOP = GAAP \neq STREET$

rownames	N	BV	OPINC	NI-OPINC	ADJ R2
STREET	14,276	0.41	26.06	7.56	43.72
EPSOP	14,276	0.48	22.19	5.07	41.91
t test			9.57∗		
Vuong Z					7.9∗

(b) Group 2: $EPSOP \neq GAAP \neq STREET$

rownames	N	BV	OPINC	NI-OPINC	ADJ R2
STREET	4,050	0.54	26.29	0.22	47.55
EPSOP	4,050	0.66	20.31	-0.33	43.73
t test			8.53∗		
Vuong Z					6.13∗

(c) Group 3: $STREET = GAAP \neq EPSOP$

rownames	N	BV	OPINC	NI-OPINC	ADJ R2
STREET	2,660	0.73	20.07	1.33	50.53
EPSOP	2,660	0.72	20.59	8.52	50.76
t test			-0.7		
Vuong Z					-0.76

(d) All three groups combined

rownames	N	BV	OPINC	NI-OPINC	ADJ R2
STREET	20,986	0.48	25.2	2.36	45.2
EPSOP	20,986	0.55	21.47	0.39	43.26
t test			11.74∗		
Vuong Z					8.3∗

Table 3: Information content evidence (3-days)

(a) Group 1: $EPSOP = GAAP \neq STREET$

rownames	N	ERC	ADJ R2
STREET	15,093	1.75	2.75
EPSOP	15,093	1.09	2.51
t test		7.79∗	
Vuong Z			0.82

(b) Group 2: $EPSOP \neq GAAP \neq STREET$

rownames	N	ERC	ADJ R2
STREET	4,850	1.09	1.56
EPSOP	4,850	0.58	1.15
t test		4.12∗	
Vuong Z			0.96

(c) Group 3: $STREET = GAAP \neq EPSOP$

rownames	N	ERC	ADJ R2
STREET	2,801	1.44	3.35
EPSOP	2,801	1.5	3.41
t test		-0.42	
Vuong Z			-0.11

(d) All three groups combined

rownames	N	ERC	ADJ R2
STREET	22,744	1.48	2.48
EPSOP	22,744	0.94	2.13
t test		8.77∗	
Vuong Z			1.51∗∗∗

Table 4: Information content evidence (63-days)

(a) Group 1: $EPSOP = GAAP \neq STREET$

rownames	N	ERC	ADJ R2
STREET	15,083	3.51	1.27
EPSOP	15,083	2.15	1.12
t test		5.43∗	
Vuong Z			0.74

(b) Group 2: $EPSOP \neq GAAP \neq STREET$

rownames	N	ERC	ADJ R2
STREET	4,845	0.97	0.14
EPSOP	4,845	0.54	0.11
t test		1.24	
Vuong Z			0.23

(c) Group 3: $STREET = GAAP \neq EPSOP$

rownames	N	ERC	ADJ R2
STREET	2,799	1.9	0.84
EPSOP	2,799	2.61	1.51
t test		-1.86	
Vuong Z			-1.58

(d) All three groups combined

rownames	N	ERC	ADJ R2
STREET	22,727	2.36	0.77
EPSOP	22,727	1.57	0.73
t test		4.45∗	
Vuong Z			0.32

References

Brown, L. D. and Sivakumar, K. (2003) Comparing the Value Relevance of Two Operating Income Measures, *Review of Accounting Studies*, **8**, 561–572.