

**Corrections of the numerical values in the paper
“Higher-order asymptotic cumulants
of Studentized estimators in covariance structures”**

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This note gives corrections of the numerical values of the higher-order asymptotic variances (standard errors) and kurtoses of the Studentized estimators (and consequently the root mean square errors of the two-term Edgeworth expansions) shown in the tables of Ogasawara (2008a, 2008b). The corrections are due to a minor bug in the computer program. The corrected values given in the following Tables 1B and 2B are similar to the uncorrected ones. Note, however, that the computational equality of the kurtoses for the Studentized regression coefficients under the uniform and t -distributions, addressed by Ogasawara (2008a) and lost by Ogasawara (2008b), has been restored.

References

- Ogasawara, H. (2008a). Higher-order asymptotic cumulants of Studentized estimators in covariance structures. *Communications in Statistics - Simulations and Computation*, 37 (5), 945-961.
- Ogasawara, H. (2008b). Errata and supplement to the paper “Higher-order asymptotic cumulants of Studentized estimators in covariance structures”. *Economic Review (Otaru University of Commerce)*, 59, (2 & 3), 95-107. <http://www.res.otaru-uc.ac.jp/~hogasa/>, <http://barrel.ih.otaru-uc.ac.jp/>

Table 1B. Simulated and theoretical cumulants of Studentized estimators in bivariate data

	Regression coefficient					Residual variance				
	Nml	U	T9	C10	C3	Nml	U	T9	C10	C3
(N)	$(1+n^{-1}\Delta\alpha_2)^{1/2}$: higher-order asymptotic standard error									
(51)	1.110	1.084	1.121	1.123	1.155	1.246	1.092	1.385	1.446	1.807
Th.	1.105	1.071	1.137	1.146	1.307	1.208	1.067	1.673	1.556	1.986
(201)	1.028	1.020	1.033	1.035	1.054	1.059	1.019	1.116	1.135	1.237
Th.	1.027	1.018	1.036	1.039	1.085	1.056	1.017	1.204	1.164	1.318
(801)	1.005	1.005	1.009	1.010	1.017	1.015	1.005	1.035	1.040	1.073
Th.	1.007	1.005	1.009	1.010	1.022	1.014	1.004	1.055	1.043	1.088
(N)	$\Delta\alpha_2$: higher-order added variance									
(51)	11.7	8.7	12.9	13.1	16.7	27.6	9.6	46.0	54.6	113.3
(201)	11.2	7.9	13.3	14.2	22.1	24.2	7.7	48.9	57.7	105.9
(801)	8.6	7.8	14.0	15.3	28.1	23.5	8.5	57.7	65.0	120.5
Th.	11.0	7.4	14.6	15.7	35.4	23.0	6.9	89.9	71.1	147.3
(N)	α_1 : bias									
(51)	-.01	-.01	-.00	-.21	-.67	-2.47	-1.55	-3.46	-3.64	-5.27
(201)	.01	-.00	.00	-.32	-1.00	-2.20	-1.47	-3.33	-3.38	-4.65
(801)	.04	-.03	.02	-.36	-1.22	-2.15	-1.47	-3.45	-3.38	-4.57
Th.	0	0	0	-.40	-1.33	-2.12	-1.44	-3.91	-3.35	-4.67
(N)	α_3 : skewness									
(51)	-.03	-.02	.02	-.39	-.89	-13.01	-2.58	-22.63	-27.22	-78.60
(201)	-.04	.02	-.03	-1.08	-3.36	-7.10	-1.50	-12.80	-14.74	-27.49
(801)	.05	-.06	.03	-1.50	-4.51	-6.00	-1.42	-11.62	-12.16	-19.28
Th.	0	0	0	-1.60	-5.33	-5.66	-1.28	-13.42	-11.46	-17.42
(N)	α_4 : kurtosis									
(51)	27	29	26	26	24	245	34	502	637	3449
(201)	19	19	16	23	24	105	16	229	315	907
(801)	17	14	19	16	40	77	15	216	275	599
Th.	30	27	27	35	83	96	22	137	305	653

Note. $N=n+1$ =Sample size; (N)=Simulated values with N in the simulation; Th.=Theoretical values; Nml, U, T9, C10 and C3=Normal, uniform, t - ($df=9$) and chi-square ($df=10, 3$) distributions, respectively.

Table 2B. $10^5 \times$ root mean square errors of the asymptotic distribution functions of the Studentized estimators in bivariate data

N	Method	Data				
		Nml	U	T9	C10	C3
Regression coefficient						
51	N*	1152	797	1314	1415	2356
	E1	1152	797	1314	1390	2307
	E2	211	250	237	491	2315
	Hall	1152	797	1314	1391	2425
201	N*	296	195	372	523	1256
	E1	296	195	372	392	723
	E2	67	63	37	94	464
	Hall	296	195	372	393	753
801	N*	60	60	101	225	690
	E1	60	60	101	113	208
	E2	31	36	21	31	76
	Hall	60	60	101	113	216
Residual variance						
51	N*	5343	3756	7297	7603	10074
	E1	2196	1083	3948	3841	5983
	E2	756	383	8390	3062	8033
	Hall	2001	906	4602	3958	6390
201	N*	2435	1814	3657	3682	4929
	E1	563	244	1351	1229	2036
	E2	137	65	1948	490	1488
	Hall	524	199	1542	1237	2216
801	N*	1199	905	1898	1848	2487
	E1	148	70	435	368	653
	E2	38	26	467	72	232
	Hall	141	59	473	366	682

Note. N*=Normal approximation, E1=The single-term Edgeworth expansion, E2=The two-term Edgeworth expansion, Hall=Hall's method by variable transformation; Nml, U, T9, C10 and C3=Normal, uniform, t - ($df=9$) and chi-square ($df=10, 3$) distributions, respectively.