Tourism Data Analysis

31 July 2019

Estimating the bias from the mean of the insample residuals

	h=1		h=2		h=3		h=4		h=5
R.method	Biased	Unbiased	Biased	Unbiased	Biased	Unbiased	Biased	Unbiased	Biased
Base	12369.08	13570.73	13151.84	14148.46	13953.93	15096.97	16069.26	17708.70	15590.22
Bottom-up	18183.62	23520.11	18186.73	24351.76	18973.91	25374.16	20590.46	27558.23	20636.83
MinT(Shrink)	10246.95	12483.31	11661.64	13969.48	12732.82	15059.67	15516.59	18781.13	14613.25
OLS	11930.06	13079.70	12806.07	13711.93	13605.12	14655.08	15762.55	17327.89	15282.88
WLS	15953.31	19657.16	16219.63	20421.96	17014.39	21380.22	19023.84	24067.02	18991.28

Estimating the bias adjusted forecasts as follows:

$$y_t = \begin{cases} \exp x_t[1 + \frac{\sigma_h^2}{2}] & \text{if } \lambda = 0 \\ (\lambda x_t + 1)^{1/\lambda}[1 + \frac{\sigma_h^2(1-\lambda)}{2(\lambda x_t+1)^2}] & \text{Otherwise} \end{cases}$$

	h=1		h=2		h=3		h=4	
R-method	Biased	Unbiased	Biased	Unbiased	Biased	Unbiased	Biased	Unbia
Base	12278.62	5.170645e+09	13171.69	5.170730e+09	13853.12	5.208223e+09	15940.78	5.246292e-
Bottom-up	17982.19	2.068269e+10	17861.05	2.068446e+10	18480.28	2.083190e+10	20500.91	2.098719e-
MinT(Shrink)	10187.03	9.899359e+03	11507.51	1.080718e+04	12402.17	1.179984e+04	15529.77	1.401968e-
OLS	11830.03	3.793202e+09	12833.82	3.793271e+09	13516.04	3.820789e+09	15618.33	3.848752e-
WLS	15728.03	1.402450e+04	15930.56	1.370782e+04	16638.94	1.450090e+04	18910.95	1.625339e-