Least Squares Forecast Averaging
Supplement

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September 2007

Abstract

This supplement includes some additional plots of the simulation results.

1 Finite Sample Investigation

The main paper includes three figures. Figure 1 and 2 display plots of the MSFE for the WBIC, Bates-Granger and MMA estimator for the regression model. Figure 3 displays similar plots for the moving average model. Here, we display more complete plots, for all estimators considered.

We include six figures, which we will call Figures A, B, C, D, E, and F. The first four are for the regression model. The final two are for the moving average model.

Figure A displays the MSFE for the BIC and WBIC estimators for the regression model. Each window corresponds to one of the eight parameter configurations. MSFE is on the y-axis and R^2 on the x-axis. You can see that the WBIC estimator achieves uniformly lower MSFE, although the difference is modest for most parameter settings

Figure B displays similar plots for the AIC, SAIC (labeled wAIC), and MMA estimators. You can see that for most parameter settings, AIC has the highest MSFE and MMA the lowest. There are some reversals for very large R^2 values.

Figure C displays similar plots for the Median, Mean and Bates-Granger estimators. For most parameterizations, Bates-Granger has the lowest MSFE. For all three estimators, the MSFE is very high (relative to the estimators shown in Figures 1 and 2) for the bottom four windows.

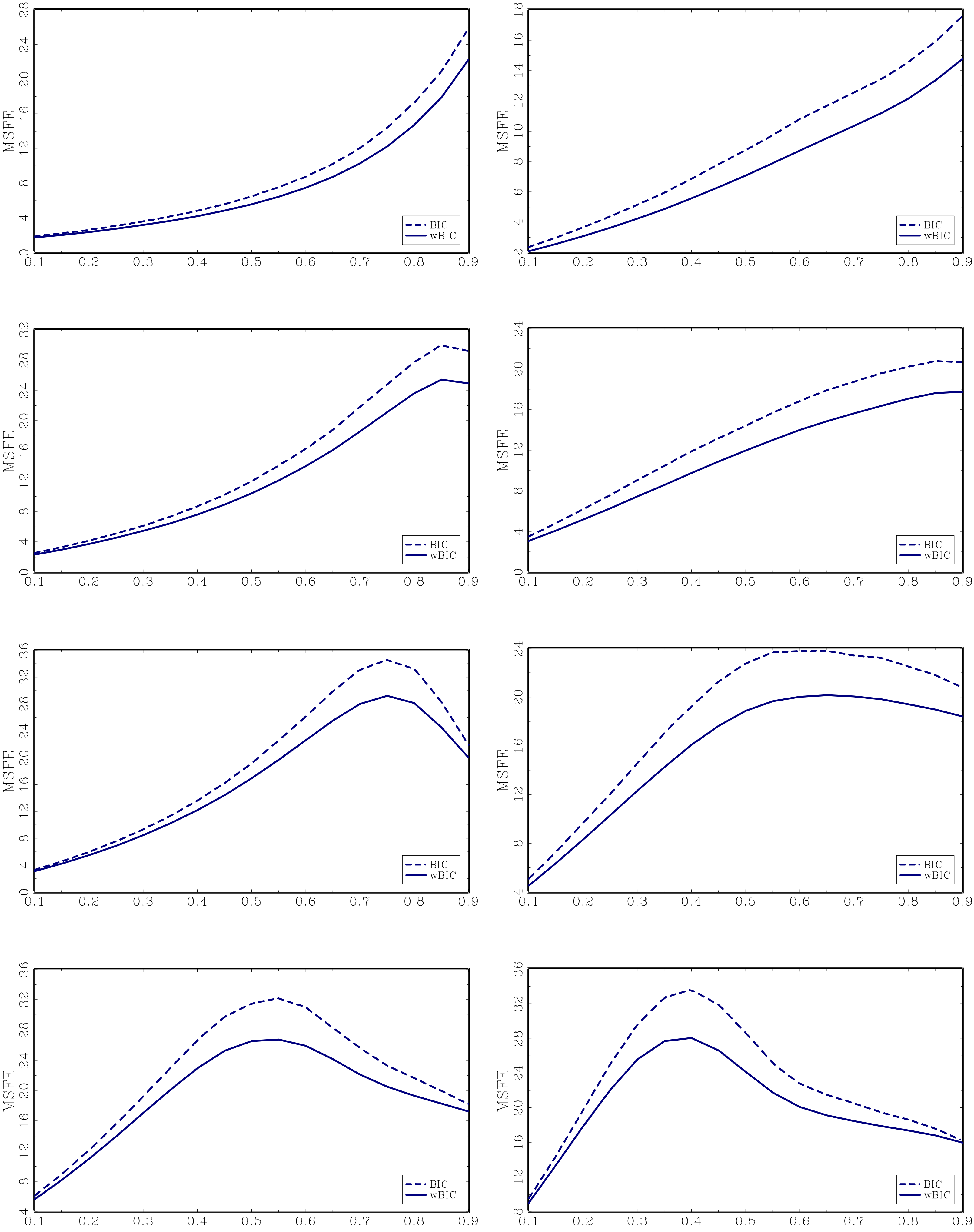
Figure D displays similar plots for the predictive least squares (PLS), Granger-Ramanathan (GR), constrained Granger-Ramanathan (CGR), and MMA estimators. Of particular note is the extremely high MSFE of the GR estimator. The MMA estimator has uniformly the lowest MSFE, and for most parameterizations the MSFE of the CGR estimator is quite close, with the PLS estimator somewhat higher.

Figures E and F display similar plots for the MA estimator. Figure E displays the MSFE for the BIC and WBIC estimators in the four left-hand windows, and the AIC, SAIC, and MMA estimators in the four right-hand windows. (Each window corresponds to one of the four cases from Figure 3 in the main paper). From the four left-hand plots, we see that WBIC uniformly dominates BIC, with a large difference in MSFE. From the four right-hand plots we see MMA uniformly dominating SAIC, which uniformly dominates AIC. MMA and SAIC have similar MSFE, and that of AIC is significantly higher.

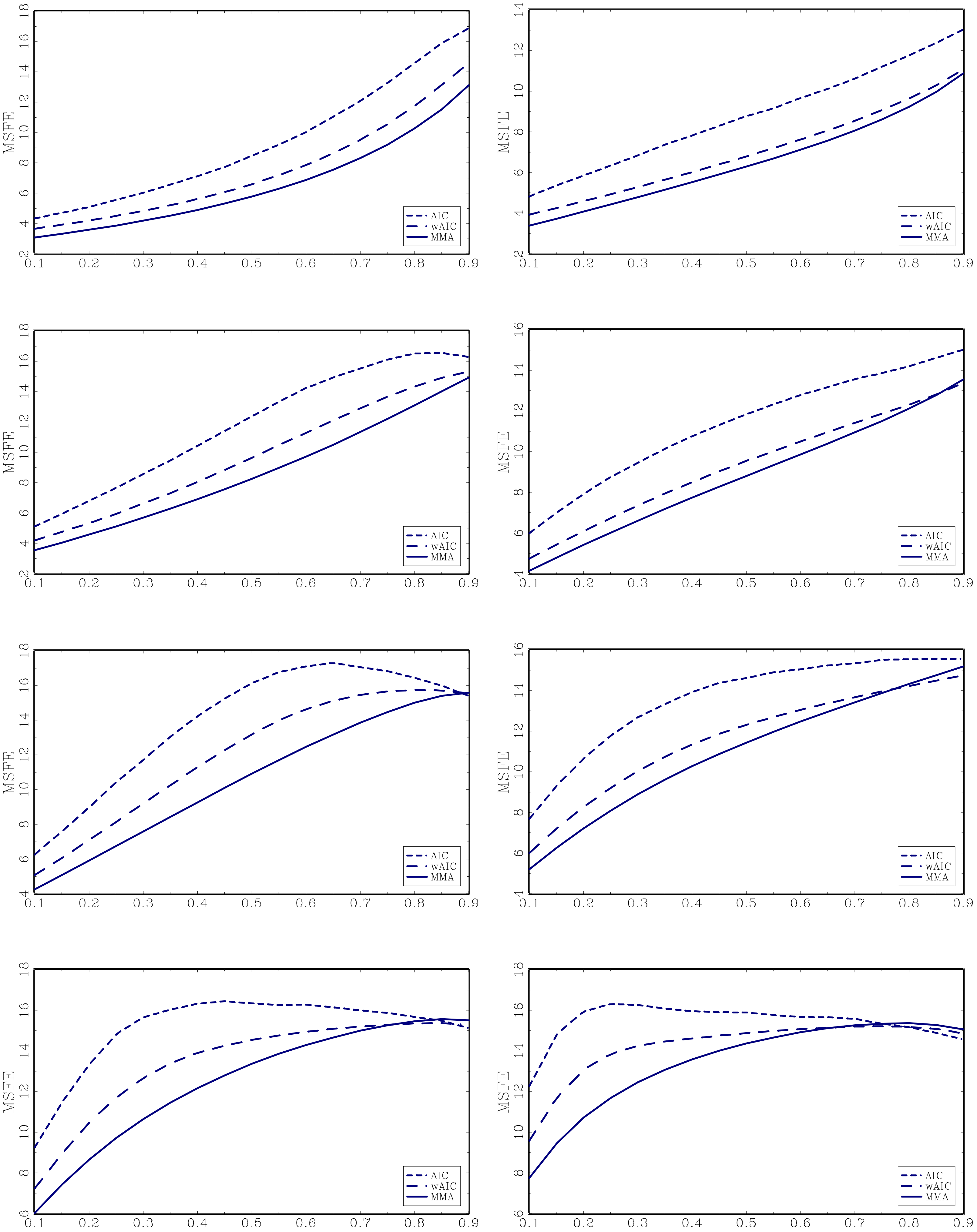
Figure F displays the MSFE for the Median, Mean and Bates-Granger estimators in the four left-hand windows, and PLS, GR, CGR and MMA in the four right-hand windows. From the left-hand windows, we see that that the Mean estimator has very high MSFE in all cases when R^2 is high, and the Bates-Granger estimator uniformly has the lowest MSFE. From the four right-hand windows we see that the GR method has very high MSFE compared to the other estimators, and MMA uniformly has the lowest MSFE, with CGR having the second lowest MSFE.

These plots complement those shown in the main paper.

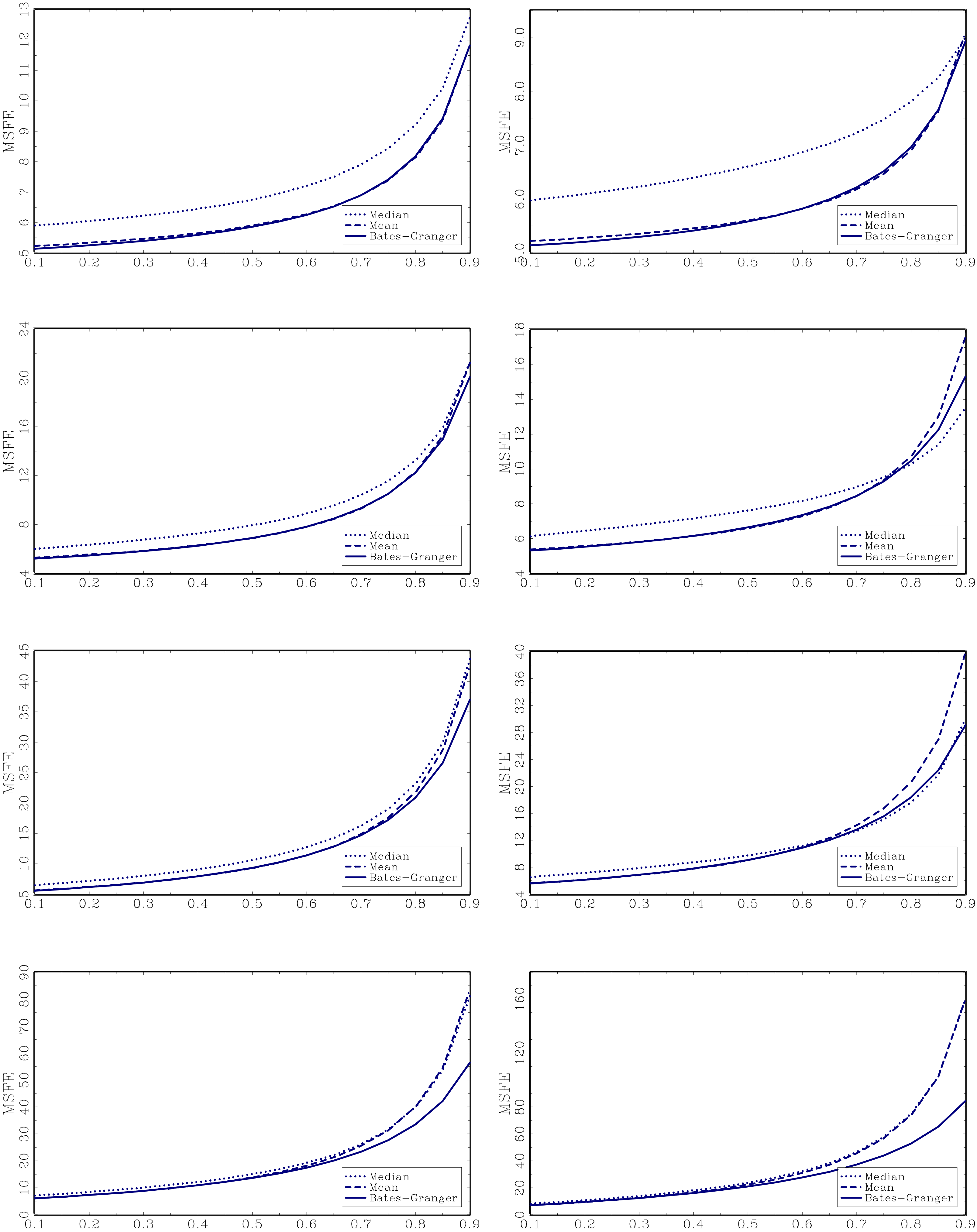
Regression Model: BIC, WBIC



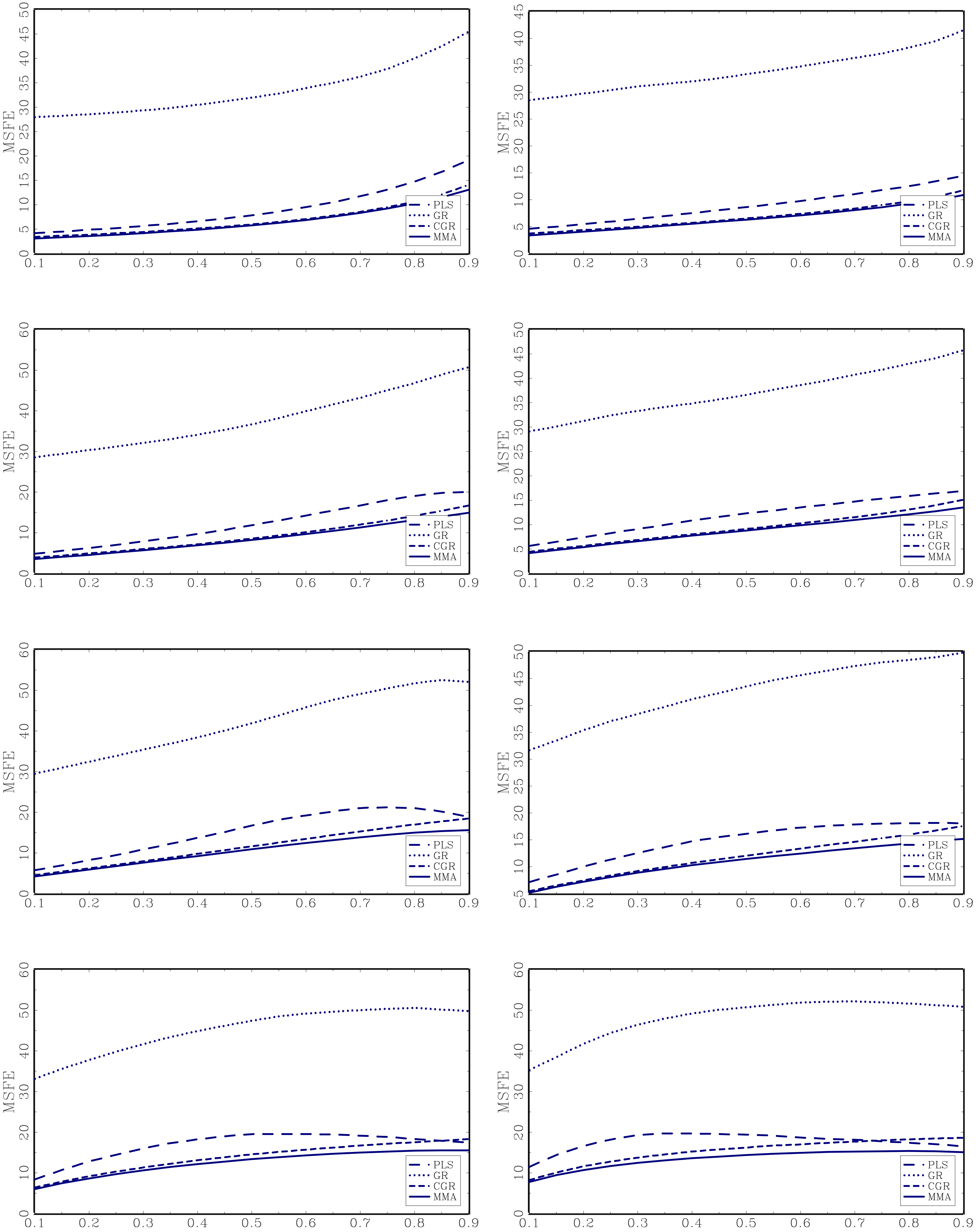
Regression Model: AIC, WAIC, MMA

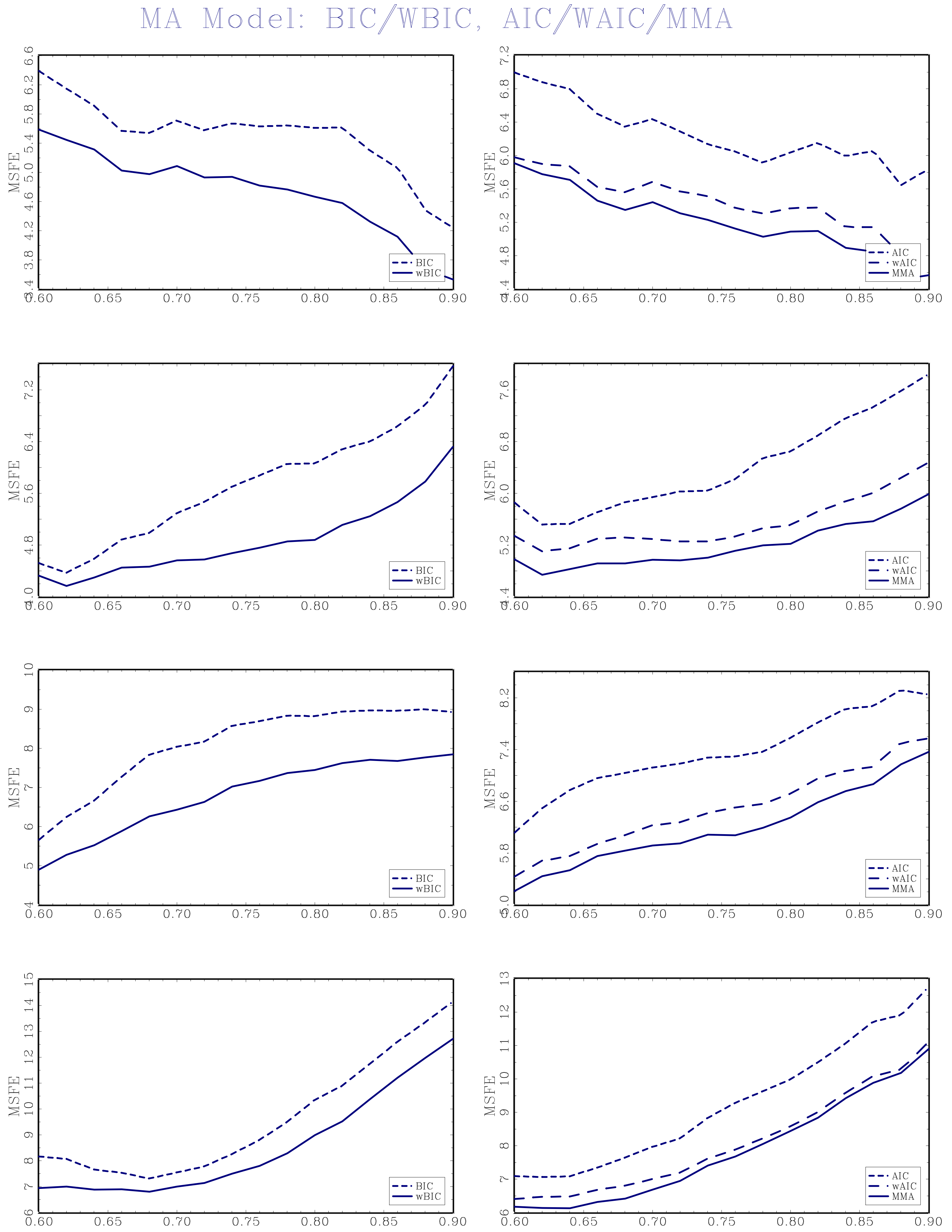


Regression Model: BG, Mean, Median



Regression Model: PLS, GR, CGR, MMA




MA Model: BIC/WBIC, AIC/WAIC/MMA
MSFE
BIC
wBIC
AIC
wAIC
MMA
0.60
0.65
0.70
0.75
0.80
0.85
0.90

MA Model: Mean/Median/BG, PLS/GR/CGR/MMA