

decisions under model uncertainty

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decisions with model uncertainty

model for data

$$Y_i \mid \beta_0, \beta_1, \dots, \beta_p, \sigma^2 \stackrel{\text{ind}}{\sim} \mathbf{N}(\beta_0 + \beta_1(x_{i1} - \bar{x}_1) + \dots + \beta_p(x_{ip} - \bar{x}_p), \sigma^2)$$

model uncertainty

objectives?

model choice

BMA Bayesian model averaging

HPM highest probability model

M Ed Po1 NW U2 Ineq Prob **Time**

MPM median probability model

M Ed Po1 NW U2 Ineq Prob

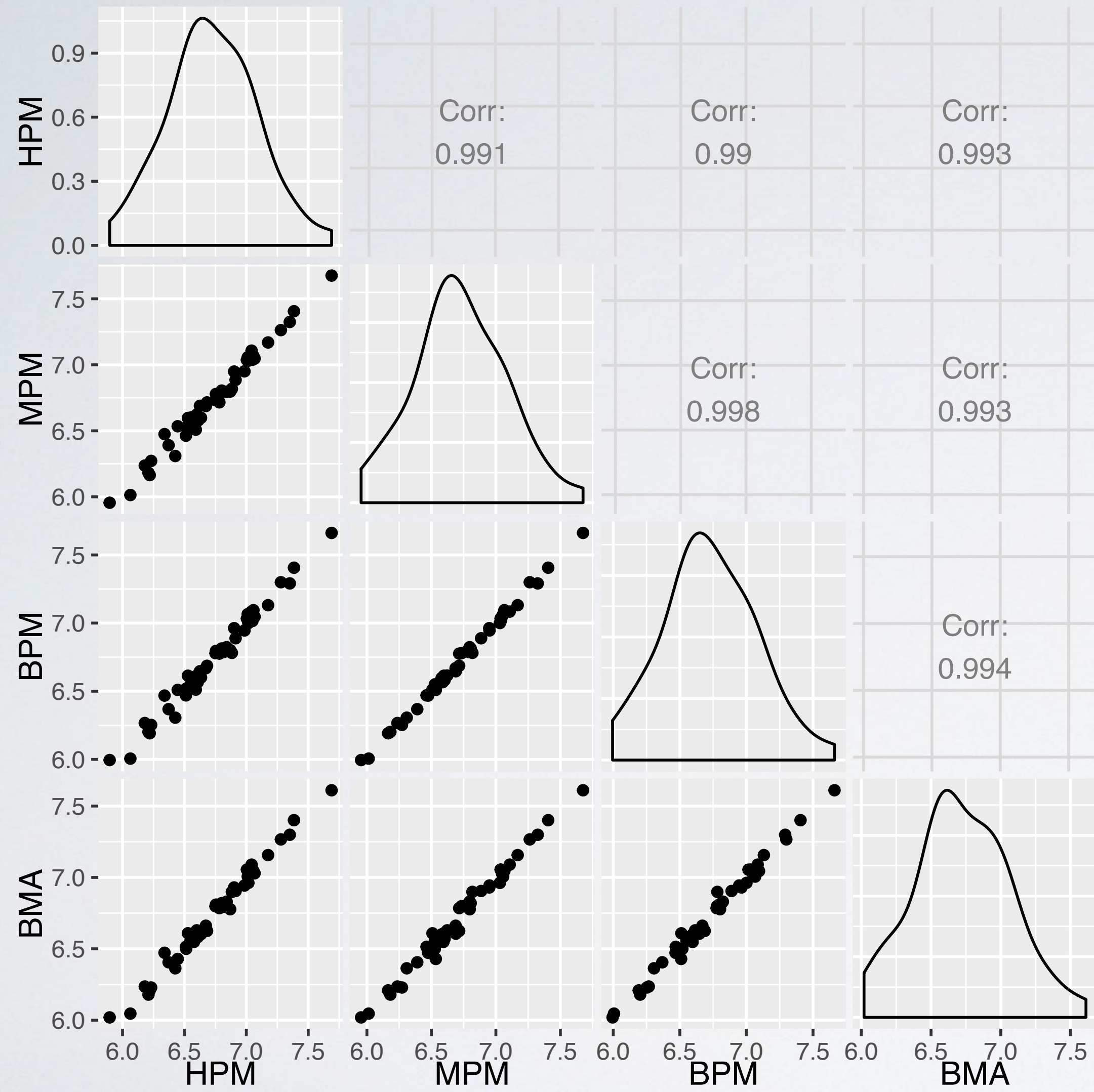
BPM best predictive model

M **So** Ed Po1 **Po2** **M.F** NW U2 Ineq
Prob

R

```
fitted(crime.ZS, type="BPM")
```

predictions



summary

- ▶ selection
- ▶ model averaging
- ▶ choice of prior over models
- ▶ full model + alternative priors on coefficients
- ▶ other distributions
- ▶ more