Problem Set 1

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Part 1.

(a)-(b) The model I used is from "What Makes an Agency Independent?" by Jennifer L Selin (2015) in the *American Journal of Political Science*. It looks at how independent government agencies are from Congress and the President in setting out policy.

(c) The model can be summarized as: $x_i \sim N(\beta_{j0} + \beta_{j1} x_i^*, \sigma_k^2)$

(d) In this case, x_i^* (or factor score of independence of agencies) is endogenous while x_i, (unobserved independence) β_{j0}, β_{j1}, (structural features of agencies) and N (number of agencies) are all exogenous variables.

(e) Here, the model is static since it does not change over time, it is nonlinear given the set-up of the equation, and finally, it is determistic since it does not account for any errors.

(f) One major feature this model is missing is any kind of variable relating to the political enviroment. Since the model is trying to capture independence of agencies, it is odd that there are no variables for things like congressional/presidential approval or any measures of the power of the government to oversee these agencies.

Part 2.

The model would go like this:

$Y_{marr} = \beta_0 + \beta_1(Age) + \beta_2(Income) + \beta_3(Compatibility) \times beta_4(DatingDuration) + \epsilon$