Problem Set #1

MACS 30100, Dr. Evans

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Problem 1

Reference: Treisman, D. (2015), Income, Democracy, and Leader Turnover. American Journal of Political Science, 59: 927942. doi:10.1111/ajps.12135

The main equation is :

$d_{it} = \alpha d_{it-1} + \gamma y_{it-1} + x'_{it-1}\beta + \mu_t + \delta_i + u_{it}$

where d_{it} is Polity2 index in country i in period t; y_{it-1} is the natural log of per capita GDP in i in the previous panel period; x'_{it-1} is a vector of covariates, lagged one period; μ_t is a full set of period dummies; δ_i is a full set of country dummies; and u_{it} is a random error with $E(u_{it}) = 0$ for all i and t.

exogenous: d_{it-1}, y_{it-1}, x'_{it-1}, μ_t, δ_i, u_{it}, $E(u_{it}) = 0$ endogenous: d_{it}

The model is dynamic, linear and stochastic.

One factor may be added to the model is the natural log of HDI index since GDP per capita is not the only indicator of citizens' happiness, putting another measure may make the model stronger. Also, since many scholar argue the large difference between income contribute more to political turbulent than absolute poverty, I suggest to consider the GINI coefficient to be another factor.

Problem 2

$$predictedlifespan = \beta_0 + \beta_1 genre + \beta_2 drugconsumption + \beta_3 numalbums + \beta_4 life\_expectation\_in\_local\_area + \epsilon \quad (1)$$

I deem the key factors are all variables listed in my equation. Average life expectancy in the musician's local area is the base case that would be influenced by external factors such as drug abuse, defatigation, and his/her genre (e.g. rock or country)

I chose these factors over others because they are voluntary actions that can be controlled by musicians themselves. Intentionally, I assumed the probability of unintended events are negligible (e.g car crashes or other unexpected death).

One limitation that may drag the preliminary test is the collection of drug consumption data, which is fairly difficult to be collected directly online. Other variables are quite handy that all information can be gathered through wikipedia or official sites of local population. I assume the error term follows random distribution.