/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

/\* /\*Data Generation & Analysis File\*/ \*/

/\* Purpose: analyze generated data & store parameter \*/

/\* estimates from analyses as scalars \*/

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clear all

set seed 907070

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/\*\*\*\*\*\*\*\* Step 1. Create blank data set \*\*\*\*\*\*\*\*/

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/\*in generating place, we'll obtain sample size\*/

//to generate a sample of 10 states, some with policy and some without it

set obs 50

gen state = \_n //place variable - selection of 10 states

gen policy = rbinomial(1, 0.5) //universal\_basic\_income policy implemented in 50% of state and not in the other 50%

expand 200

gen id = \_n

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/\*\*\*\*\*\*\*\* Step 2. Set parameters \*\*\*\*\*\*\*\*/

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/\*CODE NOT WORKING....

//shape & scale parameters for educ

local a 12

local b 1

//shape & scale parameter for intel

local c 100

local d sqrt(15)

//shape & scale parameter for viral (1-3)

local e 0.1

local f 100

\*/

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/\*\*\*\*\*\*\*\* Step 3. Generate data \*\*\*\*\*\*\*\*/

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//error terms - all error terms normally distributed

/\*does not make sense that 'place' and 'policy' would have error terms\*/

gen econ1\_e = rnormal(0.1, 0.0001)

gen econ1q1\_e = rnormal(0.1, 0.0001)

gen econ1q2\_e = rnormal(0.1, 0.0001)

gen econ1q3\_e = rnormal(0.1, 0.0001)

gen econ2\_e = rnormal(0.1, 0.0001)

gen econ2q1\_e = rnormal(0.1, 0.0001)

gen econ2q2\_e = rnormal(0.1, 0.0001)

gen econ2q3\_e = rnormal(0.1, 0.0001)

gen econ3\_e = rnormal(0.1, 0.0001)

gen econ3q1\_e = rnormal(0.1, 0.0001)

gen econ3q2\_e = rnormal(0.1, 0.0001)

gen econ3q3\_e = rnormal(0.1, 0.0001)

gen viral1\_e = rnormal(0.1, 0.0001)

gen viral2\_e = rnormal(0.1, 0.0001)

gen viral3\_e = rnormal(0.1, 0.0001)

//continuous

gen educ = int(rnormal(12,2)) //years of education

gen intel = int(rnormal(100, sqrt(15))) //IQ (intelligence, unmeasured) with average score = 100 and sd = 15

//categorical

gen econ1 = int(rgamma(2, 0.5) + econ1\_e) + int(0.8\*policy + 1.3\*(educ-12) + (1.1\*(intel-100)))

replace econ1 = 1 if econ1 <=1

replace econ1 = 2 if econ1 > 1 & econ1 <= 4

replace econ1 = 3 if econ1 > 4 & econ1 <= 9

replace econ1 = 4 if econ1 > 9 //economic statbility at time1

gen econ2 = int(rgamma(2, 0.5) + econ2\_e) + int(0.9\*econ1 + 1.3\*(educ-12) + (1.1\*(intel-100)))

replace econ2 = 1 if econ2 <=1

replace econ2 = 2 if econ2 > 1 & econ2 <= 4

replace econ2 = 3 if econ2 > 4 & econ2 <= 9

replace econ2 = 4 if econ2 > 9 //economic stability at time 2

gen econ3 = int(rgamma(2, 0.5) + econ3\_e) + int(0.9\*econ2 + 1.3\*(educ-12) + (1.1\*(intel-100)))

replace econ3 = 1 if econ3 <=1

replace econ3 = 2 if econ3 > 1 & econ3 <= 4

replace econ3 = 3 if econ3 > 4 & econ3 <= 9

replace econ3 = 4 if econ3 > 9

//continuous

gen econ1\_q1 = int(rnormal(6000,200) + econ1q1\_e) - 1500\*(econ1-4) //economic stability at time 1, question 1: monthly household income

gen econ1\_q2 = int(rgamma(10000,0.1) + econ1q2\_e) + int(rnormal(6000, 500)\*(econ1==4)) + int(rnormal(3000, 500)\*(econ1==3)) + int(rnormal(500,100)\*(econ1==2)) + int(rnormal(-800, 50)\*(econ1==1)) //economic stability at time 1, question 2: current savings amount

gen econ1\_q3 = int(rnormal(4.6, 1) + econ1q3\_e) + (0.5\*(econ1-0.7)) //economic stability at time 1, question 3: years of employment in current field

gen econ2\_q1 = int(rnormal(6000,200) + econ2q1\_e) - 1500\*(econ2-4) //economic stability at time 2, question 1

gen econ2\_q2 = int(rgamma(10000,0.1) + econ2q2\_e) + int(rnormal(6000, 500)\*(econ2==4)) + int(rnormal(3000, 500)\*(econ2==3)) + int(rnormal(500,100)\*(econ2==2)) + int(rnormal(-800, 50)\*(econ2==1)) //economic stability at time 2, question 2

gen econ2\_q3 = int(rnormal(4.6, 1) + econ2q3\_e) + (0.5\*(econ2-0.7)) //economic stability at time 2, question 3

gen econ3\_q1 = int(rnormal(6000,200) + econ3q1\_e) - 1500\*(econ3-4) //economic stability at time 3, question 1

gen econ3\_q2 = int(rgamma(10000,0.1) + econ3q2\_e) + int(rnormal(6000, 500)\*(econ3==4)) + int(rnormal(3000, 500)\*(econ3==3)) + int(rnormal(500,100)\*(econ3==2)) + int(rnormal(-800, 50)\*(econ3==1)) //economic stability at time 3, question 2

gen econ3\_q3 = int(rnormal(4.6, 1) + econ3q3\_e) + (0.5\*(econ3-0.7)) //economic stability at time 3, question 3

gen viral1 = 4000\*exp(rnormal()) - 2000 + viral1\_e + 3000\*(econ1 == 1) + 1000\*(econ1 == 2) - 0.15\*educ - 0.03\*intel + 0.0003\*state

replace viral1 = 0 if viral1 < 0 //HIV viral load at time 1

gen viral2 = 4000\*exp(rnormal()) + 0.1\*viral1 - 2000 + viral2\_e + 3000\*(econ2 == 1) + 1000\*(econ2 == 2) - 0.15\*educ - 0.03\*intel + 0.0003\*state

replace viral2 = 0 if viral2 < 0

gen viral3 = 4000\*exp(rnormal()) + 0.1\*viral2 - 2000 + viral3\_e + 3000\*(econ3 == 1) + 1000\*(econ3 == 2) - 0.15\*educ - 0.03\*intel + 0.0003\*state

replace viral3 = 0 if viral3 < 0 //HIV viral load at time 3

drop econ1\_e econ1q1\_e econ1q2\_e econ1q3\_e econ2\_e econ2q1\_e econ2q2\_e econ2q3\_e econ3\_e econ3q1\_e econ3q2\_e econ3q3\_e viral1\_e viral2\_e viral3\_e

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/\*\*\*\*\*\*\*\* Step 4. Look at data \*\*\*\*\*\*\*\*/

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