```
                                                      ___  ____  ____  ____  ____(R)
                                                     /__    /   ____/   /   ____/
                                                    ___/   /   /___/   /   /___/
                                                      Statistics/Data Analysis

       panel variable:  stfips (strongly balanced)
            name:  <unnamed>
             log:  C:\Users\ramon\Desktop\UZH\Empirical Methods\Problem Sets\Problem Set 4\Stata\log_gm
        log type:  smcl
       opened on:  16 Dec 2019, 11:05:36

 1 .
 2 . insheet using "C:\Users\ramon\Desktop\UZH\Empirical Methods\Problem Sets\Problem Set 4\Stata\mo
(18 vars, 26,460 obs)

 3 .
 4 . *a)
 5 . gen int date = ym(year, month)

 6 . format date %tm

 7 . xtset stfips date
       panel variable:  stfips (strongly balanced)
        time variable:  date, 1960m1 to 2004m12
                delta:  1 month

 8 .
 9 . reg lndrate bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10

      Source |       SS           df       MS      Number of obs   =    26,460
-------------+----------------------------------   F(9, 26450)     =    288.11
       Model |  55.5787378         9  6.17541531   Prob > F        =    0.0000
    Residual |  566.931644    26,450  .021434089   R-squared       =    0.0893
-------------+----------------------------------   Adj R-squared   =    0.0890
       Total |  622.510382    26,459  .023527359   Root MSE        =    .1464

------------------------------------------------------------------------------
     lndrate |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       bin_1 |   .0037646   .0006566     5.73   0.000     .0024776    .0050516
       bin_2 |   .0118639   .0009757    12.16   0.000     .0099515    .0137763
       bin_3 |   .0031687   .0006573     4.82   0.000     .0018803    .0044571
       bin_4 |   .0063594   .0004572    13.91   0.000     .0054632    .0072557
       bin_5 |   .0035238   .0002962    11.90   0.000     .0029433    .0041043
       bin_6 |   .0038665   .0004413     8.76   0.000     .0030015    .0047315
       bin_8 |    .003154   .0003598     8.77   0.000     .0024488    .0038591
       bin_9 |   .0024136    .000273     8.84   0.000     .0018785    .0029486
      bin_10 |  -.0104281   .0009115   -11.44   0.000    -.0122146   -.0086416
       _cons |   4.198056   .0066686   629.52   0.000     4.184985    4.211127
------------------------------------------------------------------------------

10 . outreg2 using "ps4rega.doc", replace ctitle (pooled) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 b
ps4rega.doc
dir : seeout

11 .
```

```
12 . *c)
13 .
14 . xtreg lndrate bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10 i.month, fe

Fixed-effects (within) regression               Number of obs      =     26,460
Group variable: stfips                          Number of groups   =         49

R-sq:                                           Obs per group:
     within  = 0.3742                                         min =        540
     between = 0.0078                                         avg =      540.0
     overall = 0.1175                                         max =        540

                                                F(20,26391)        =     789.08
corr(u_i, Xb)  = -0.0483                        Prob > F           =     0.0000

------------------------------------------------------------------------------
     lndrate |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       bin_1 |    .001355   .0003877     3.49   0.000      .000595     .002115
       bin_2 |   .0050555   .0005222     9.68   0.000      .004032    .0060789
       bin_3 |   .0019431   .0003687     5.27   0.000     .0012204    .0026659
       bin_4 |   .0021248   .0002713     7.83   0.000      .001593    .0026566
       bin_5 |   .0022559   .0001896    11.90   0.000     .0018843    .0026275
       bin_6 |    .001252   .0002393     5.23   0.000      .000783    .0017209
       bin_8 |  -.0008468   .0001946    -4.35   0.000    -.0012282   -.0004654
       bin_9 |  -.0012094   .0001875    -6.45   0.000    -.0015769   -.0008418
      bin_10 |  -.0011824   .0005247    -2.25   0.024    -.0022108   -.0001541
             |
       month |
          2  |  -.1043727   .0023536   -44.35   0.000    -.1089858   -.0997595
          3  |  -.0431939   .0025646   -16.84   0.000    -.0482207   -.0381671
          4  |  -.0971686   .0033415   -29.08   0.000     -.103718   -.0906191
          5  |  -.0698855   .0043229   -16.17   0.000    -.0783586   -.0614123
          6  |  -.0948055   .0053766   -17.63   0.000     -.105344    -.084267
          7  |  -.0576333   .0061084    -9.44   0.000    -.0696061   -.0456606
          8  |   -.080949   .0058911   -13.74   0.000    -.0924959    -.069402
          9  |   -.123796   .0048808   -25.36   0.000    -.1333625   -.1142294
         10  |  -.0751955   .0035971   -20.90   0.000    -.0822461   -.0681449
         11  |  -.1069319   .0026977   -39.64   0.000    -.1122196   -.1016442
         12  |  -.0270379   .0022622   -11.95   0.000    -.0314719   -.0226039
             |
       _cons |   4.344151   .0056615   767.32   0.000     4.333054    4.355248
-------------+----------------------------------------------------------------
     sigma_u |  .12537153
     sigma_e |  .07359127
         rho |  .74374216   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(48, 26391) = 1490.57                 Prob > F = 0.0000

15 . outreg2 using "ps4regc.doc", replace ctitle (s&m-FE) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 b
   ps4regc.doc
   dir : seeout
```

```
16 .
17 . *d)
18 . set matsize 1000

19 .
20 . quietly xtreg lndrate bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10 i.month#i.stfips

21 . outreg2 using "ps4regd.doc", replace ctitle (s per m-FE) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bir
   ps4regd.doc
   dir : seeout

22 .
23 . *f)
24 .
25 . **i)
26 . preserve

27 . collapse (sum) bin_10, by(year)

28 . twoway (line bin_10 year)

29 . graph export hotovertime.png
   (file hotovertime.png written in PNG format)

30 . restore

31 .
32 . **ii)
33 . preserve

34 . collapse (mean) lndrate, by(year)

35 . twoway (line lndrate year)

36 . graph export deathovertime.png
   (file deathovertime.png written in PNG format)

37 . restore

38 .
39 . *g)
40 . gen year2=year^2

41 . quietly xtreg lndrate bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10 devp25 devp75 year

42 . outreg2 using "ps4regg.doc", replace ctitle (s per m-FE) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bir
   > te/Month FE, YES)
   ps4regg.doc
   dir : seeout

43 .
```

```
44 . *h)
45 . quietly xtreg lndrate_mva bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10 i.month#i.stfi

46 . outreg2 using "ps4regh.doc", replace ctitle (MVA) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_
   ps4regh.doc
   dir : seeout

47 .
48 . quietly xtreg lndrate_cvd bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8 bin_9 bin_10 i.month#i.stfi

49 . outreg2 using "ps4regh.doc", append ctitle (CVD) keep(bin_1 bin_2 bin_3 bin_4 bin_5 bin_6 bin_8
   ps4regh.doc
   dir : seeout

50 .
51 .
52 .
   end of do-file
```