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

analysis
```

```
_____
_____
             name:  <unnamed>
              log:  /Users/muhaoli/Documents/24-25/ECON 410/hw5/
hw5logs.smcl
         log type:  smcl
        opened on:   2 Dec 2024, 22:45:56

    1 . use "loanapp.dta"

    2 . regress approve white

          Source |       SS           df       MS      Number of obs
=      1,989
     ------------+----------------------------------   F(1, 1987)
=     102.23
           Model |  10.4743407         1  10.4743407   Prob > F
=     0.0000
        Residual |   203.59303     1,987  .102462521   R-squared
=     0.0489
     ------------+----------------------------------   Adj R-squared
=     0.0485
           Total |  214.067371     1,988  .107679764   Root MSE
=     .3201


_____
_____
         approve | Coefficient  Std. err.      t    P>|t|     [95%
conf. interval]
     ------------
+--------------------------------------------------------------
           white |   .2005957      .01984    10.11   0.000
.1616864      .239505
           _cons |   .7077922    .0182393    38.81   0.000
.6720221     .7435623

_____
_____
```

```
     3 . regress approve white hrat obrat loanprc unem male married
dep sch cosign chi
       > st pubrec mortlat1 mortlat2 vr

             Source |       SS          df      MS      Number of obs
=      1,971
       -------------+----------------------------------   F(15, 1955)
=      25.86
              Model | 35.4004789        15  2.36003193   Prob > F
=      0.0000
           Residual | 178.393534      1,955   .09124989   R-squared
=      0.1656
       -------------+----------------------------------   Adj R-squared
=      0.1592
              Total | 213.794013      1,970   .10852488   Root MSE
=      .30208
```

```
------------------------------------------------------------------------
--------
          approve | Coefficient  Std. err.      t    P>|t|      [95%
conf. interval]
      -------------
+----------------------------------------------------------
            white |  .1288196   .0197317     6.53   0.000
.0901223    .1675169
             hrat |   .001833   .0012632     1.45   0.147
-.0006444    .0043104
            obrat | -.0054318   .0011018    -4.93   0.000
-.0075926    -.003271
          loanprc | -.1473001   .0375159    -3.93   0.000
-.2208755   -.0737247
             unem | -.0072989    .003198    -2.28   0.023
-.0135708   -.0010271
             male | -.0041441   .0188644    -0.22   0.826
-.0411405    .0328523
          married |  .0458241   .0163077     2.81   0.005
.0138418    .0778064
              dep | -.0068274   .0067013    -1.02   0.308
-.0199699    .0063151
              sch |  .0017525   .0166498     0.11   0.916
-.0309006    .0344057
           cosign |  .0097722   .0411394     0.24   0.812
-.0709094    .0904538
            chist |  .1330267   .0192627     6.91   0.000
.0952492    .1708043
           pubrec | -.2419268   .0282274    -8.57   0.000
-.2972858   -.1865677
          mortlat1 | -.0572511    .050012    -1.14   0.252
-.1553336    .0408314
```

```
        mortlat2 |   -.1137234    .0669838     -1.70    0.090
-.2450905     .0176438
              vr |   -.0314408    .0140313     -2.24    0.025
-.0589586    -.0039229
           _cons |    .9367312    .0527354     17.76    0.000
.8333077     1.040155

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    4 . gen white_obrat=white*obrat

    5 . regress approve white obrat white_obrat

          Source |       SS           df       MS      Number of obs
=      1,989
    -------------+----------------------------------   F(3, 1985)
=      56.03
           Model |  16.7108334        3  5.57027779   Prob > F
=      0.0000
        Residual |  197.356537    1,985  .099423948   R-squared
=      0.0781
    -------------+----------------------------------   Adj R-squared
=      0.0767
           Total |  214.067371    1,988  .107679764   Root MSE
=      .31532

------------------------------------------------------------------
--------
         approve | Coefficient  Std. err.      t    P>|t|     [95%
conf. interval]
    ------------
+-----------------------------------------------------------
           white |   -.099083    .0829816     -1.19    0.233
-.2618232     .0636572
           obrat |   -.0131656    .0021757     -6.05    0.000
-.0174325    -.0088986
     white_obrat |    .0083778    .0023689      3.54    0.000
.003732      .0130236
           _cons |    1.160773    .0769852     15.08    0.000
1.009793     1.311753

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    6 . clear

    7 . dir
```

```
        total 1336
        -rw-r--r--@ 1 muhaoli  staff    99304 Dec  2 15:00 Problem set
5.pdf
        -rw-r--r--  1 muhaoli  staff     7213 Dec  2 23:03 hw5logs.smcl
        -rw-r--r--@ 1 muhaoli  staff   533507 Dec  2 15:00 loanapp.dta
        -rw-r--r--@ 1 muhaoli  staff    34779 Dec  2 14:59 pntsprd.dta

    8 . use pntsprd.dta

    9 . regress favwin spread

            Source |       SS           df       MS      Number of obs
=       553
    -------------+----------------------------------   F(1, 551)
=     68.57
           Model |  11.0636261         1  11.0636261   Prob > F
=     0.0000
        Residual |  88.9038241       551  .161349953   R-squared
=     0.1107
    -------------+----------------------------------   Adj R-squared
=     0.1091
           Total |  99.9674503       552  .181100453   Root MSE
=     .40168


--------------------------------------------------------------------
--------
          favwin | Coefficient  Std. err.      t    P>|t|      [95%
conf. interval]
    -------------
+-------------------------------------------------------------------
          spread |  .0193655   .0023386     8.28   0.000
.0147718    .0239593
           _cons |  .5769492   .0282345    20.43   0.000
.5214888    .6324097

--------------------------------------------------------------------
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   10 . test _cons = 0.5

     ( 1)  _cons = .5

         F(  1,   551) =     7.43
               Prob > F =    0.0066

   11 .
   12 . regress favwin spread, robust

    Linear regression                                Number of obs
```

```
              =          553
                                                              F(1, 551)
              =       101.54
                                                              Prob > F
              =       0.0000
                                                              R-squared
              =       0.1107
                                                              Root MSE
              =       .40168
```

```
-----------------------------------------------------------------------
--------
             |                 Robust
      favwin | Coefficient  std. err.      t    P>|t|      [95%
conf. interval]
-------------+---------------------------------------------------------
      spread |   .0193655   .0019218    10.08   0.000
.0155905     .0231405
       _cons |   .5769492   .0316568    18.23   0.000
.5147664     .6391321
-----------------------------------------------------------------------
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```

```
    13 . test _cons = 0.5

      ( 1)  _cons = .5

           F(  1,   551) =     5.91
                 Prob > F =     0.0154

    14 .
    15 . probit favwin spread

       Iteration 0:  Log likelihood = -302.74988
       Iteration 1:  Log likelihood = -264.91454
       Iteration 2:  Log likelihood = -263.56319
       Iteration 3:  Log likelihood = -263.56219
       Iteration 4:  Log likelihood = -263.56219

       Probit regression                                      Number
of obs =    553
                                                              LR
chi2(1)    =  78.38
                                                              Prob >
chi2   = 0.0000
       Log likelihood = -263.56219                            Pseudo
R2     = 0.1294
```

```
-------------------------------------------------------------------------
--------
        favwin | Coefficient  Std. err.      z     P>|z|     [95%
conf. interval]
        -------------
+------------------------------------------------------------------
        spread |    .092463    .0121811    7.59    0.000
.0685885     .1163374
         _cons |  -.0105926    .1037469   -0.10    0.919
-.2139329     .1927476

-------------------------------------------------------------------------
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   16 . disp normprob(_b[_cons] + _b[spread]*10)
     .81965134

   17 . log close
         name:  <unnamed>
          log:  /Users/muhaoli/Documents/24-25/ECON 410/hw5/
hw5logs.smcl
      log type:  smcl
     closed on:   2 Dec 2024, 23:16:11

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```