```
-------------------------------------------------------------------------------
-----------------------------------------------
      name:  <unnamed>
       log:
C:\Users\TA0VLW1\Documents\WORK\Faculty_Salary_Study\PROGRAMS\LMORATErob_tab1B-SPEC_
STEPS.log
  log type:  text
 opened on:  10 Mar 2018, 14:38:14

.
. **** USE DATA SET ********
. use C:\Users\TA0VLW1\Documents\WORK\Faculty_Salary_Study\DATA\FSS2015-16C

. keep if morate ~= . & merit ~= . & yrsoth ~= .
(0 observations deleted)

.
. describe

Contains data from
C:\Users\TA0VLW1\Documents\WORK\Faculty_Salary_Study\DATA\FSS2015-16C.dta
  obs:           575
 vars:            87                          9 Mar 2018 16:55
 size:       120,750
-------------------------------------------------------------------------------
-----------------------------------------------
              storage   display    value
variable name   type    format     label      variable label
-------------------------------------------------------------------------------
-----------------------------------------------
control         long    %12.0g
college         byte    %8.0g
dept            byte    %8.0g
age             double  %12.0g
female          byte    %8.0g
minority        byte    %8.0g
asian           byte    %8.0g
black           byte    %8.0g
hisp            byte    %8.0g
morate          double  %12.0g
full            byte    %8.0g
assoc           byte    %8.0g
rkyrs           double  %12.0g
yrsniu          double  %12.0g
yrsoth          float   %9.0g
merit           double  %12.0g
saladj          byte    %8.0g
seadj           byte    %8.0g
profship        byte    %8.0g
RKST_FULL       byte    %8.0g
RKST_ASSOC      byte    %8.0g
CUPA_NAT        double  %12.0g
CUPA_NIU        double  %12.0g
CUPA_NATR       double  %12.0g
yearstart       int     %8.0g
quint           float   %9.0g
quintTOP        float   %9.0g
quint2ND        float   %9.0g
quintMID        float   %9.0g
quint4TH        float   %9.0g
quintBOT        float   %9.0g
lmorate         float   %9.0g
cupa000         float   %9.0g
```

whmale	float	%9.0g	
RKST_ASSIST	float	%9.0g	
assist	float	%9.0g	
salstart	float	%9.0g	
yrsniu2	float	%9.0g	
yrsoth2	float	%9.0g	
dept1	byte	%8.0g	dept== 1.0000
dept2	byte	%8.0g	dept== 2.0000
dept3	byte	%8.0g	dept== 3.0000
dept4	byte	%8.0g	dept== 4.0000
dept5	byte	%8.0g	dept== 5.0000
dept6	byte	%8.0g	dept== 6.0000
dept7	byte	%8.0g	dept== 7.0000
dept8	byte	%8.0g	dept== 8.0000
dept9	byte	%8.0g	dept== 9.0000
dept10	byte	%8.0g	dept== 10.0000
dept11	byte	%8.0g	dept== 11.0000
dept12	byte	%8.0g	dept== 13.0000
dept13	byte	%8.0g	dept== 14.0000
dept14	byte	%8.0g	dept== 15.0000
dept15	byte	%8.0g	dept== 16.0000
dept16	byte	%8.0g	dept== 17.0000
dept17	byte	%8.0g	dept== 18.0000
dept18	byte	%8.0g	dept== 19.0000
dept19	byte	%8.0g	dept== 20.0000
dept20	byte	%8.0g	dept== 21.0000
dept21	byte	%8.0g	dept== 22.0000
dept22	byte	%8.0g	dept== 23.0000
dept23	byte	%8.0g	dept== 24.0000
dept24	byte	%8.0g	dept== 25.0000
dept25	byte	%8.0g	dept== 26.0000
dept26	byte	%8.0g	dept== 27.0000
dept27	byte	%8.0g	dept== 28.0000
dept28	byte	%8.0g	dept== 29.0000
dept29	byte	%8.0g	dept== 30.0000
dept30	byte	%8.0g	dept== 31.0000
dept31	byte	%8.0g	dept== 32.0000
dept32	byte	%8.0g	dept== 34.0000
dept33	byte	%8.0g	dept== 35.0000
dept34	byte	%8.0g	dept== 36.0000
dept35	byte	%8.0g	dept== 38.0000
dept36	byte	%8.0g	dept== 39.0000
dept37	byte	%8.0g	dept== 40.0000
dept38	byte	%8.0g	dept== 41.0000
dept39	byte	%8.0g	dept== 42.0000
dept40	byte	%8.0g	dept== 43.0000
dept41	byte	%8.0g	dept== 44.0000
dept42	byte	%8.0g	dept== 45.0000
quintD	float	%9.0g	
quintDTOP	float	%9.0g	
quintD2ND	float	%9.0g	
quintDMID	float	%9.0g	
quintD4TH	float	%9.0g	
quintDBOT	float	%9.0g	

Sorted by: quintD

. summarize

Variable	Obs	Mean	Std. Dev.	Min	Max
control	575	121888.3	12709.46	102101	148139

college	575	4.537391	1.950139	1	8
dept	575	25.37391	13.00138	1	45
age	575	50.00178	10.10232	27.26575	80.11507
female	575	.4313043	.4956896	0	1
minority	575	.2295652	.4209194	0	1
asian	575	.1513043	.3586573	0	1
black	575	.0417391	.2001666	0	1
hisp	575	.0330435	.1789058	0	1
morate	575	8754.981	2560.947	4084	19444.46
full	575	.333913	.4720197	0	1
assoc	575	.4452174	.4974225	0	1
rkyrs	575	4.71827	4.919266	0	29
yrsniu	575	13.03161	8.601392	0	46.96986
yrsoth	575	2.29913	4.026816	0	33
merit	575	4.56711	1.324462	1.636667	9.666667
saladj	575	.0313043	.1742906	0	1
seadj	575	.0886957	.2845515	0	1
profship	575	.08	.2715294	0	1
RKST_FULL	575	.026087	.1595327	0	1
RKST_ASSOC	575	.0765217	.2660625	0	1
CUPA_NAT	575	9410.338	2287.929	6129.519	16705.33
CUPA_NIU	575	9516.085	2291.557	6348.247	16693
CUPA_NATR	575	9625.953	2622.314	5818.849	18179.78
yearstart	575	2003.031	8.594974	1969	2016
quint	575	2.963478	1.415588	1	5
quintTOP	575	.1930435	.3950305	0	1
quint2ND	575	.1982609	.3990369	0	1
quintMID	575	.1930435	.3950305	0	1
quint4TH	575	.2104348	.4079724	0	1
quintBOT	575	.2052174	.404212	0	1
lmorate	575	9.040346	.2650569	8.314832	9.875318
cupa000	575	9.516085	2.291557	6.348247	16.693
whmale	575	.4434783	.4972276	0	1
RKST_ASSIST	575	.8973913	.3037113	0	1
assist	575	.2208696	.4151939	0	1
salstart	570	8147.535	3902.547	1199.88	32521.98
yrsniu2	575	243.6781	281.4372	0	2206.168
yrsoth2	575	21.47304	72.00897	0	1089
dept1	575	.0295652	.169532	0	1
dept2	575	.0121739	.1097573	0	1
dept3	575	.0191304	.1371027	0	1
dept4	575	.013913	.1172321	0	1
dept5	575	.0121739	.1097573	0	1
dept6	575	.013913	.1172321	0	1
dept7	575	.0208696	.1430721	0	1
dept8	575	.0191304	.1371027	0	1
dept9	575	.0226087	.1487819	0	1
dept10	575	.0191304	.1371027	0	1
dept11	575	.0191304	.1371027	0	1
dept12	575	.0156522	.1242338	0	1
dept13	575	.0173913	.1308381	0	1
dept14	575	.0086957	.092925	0	1
dept15	575	.0156522	.1242338	0	1

dept16	575	.0295652	.169532	0	1
dept17	575	.026087	.1595327	0	1
dept18	575	.0173913	.1308381	0	1
dept19	575	.0243478	.1542608	0	1
dept20	575	.0156522	.1242338	0	1
dept21	575	.0365217	.1877477	0	1
dept22	575	.0208696	.1430721	0	1
dept23	575	.0347826	.1833883	0	1
dept24	575	.0156522	.1242338	0	1
dept25	575	.0156522	.1242338	0	1
dept26	575	.0434783	.2041087	0	1
dept27	575	.026087	.1595327	0	1
dept28	575	.0191304	.1371027	0	1
dept29	575	.0191304	.1371027	0	1
dept30	575	.0434783	.2041087	0	1
dept31	575	.0382609	.1919924	0	1
dept32	575	.0173913	.1308381	0	1
dept33	575	.0347826	.1833883	0	1
dept34	575	.0173913	.1308381	0	1
dept35	575	.0434783	.2041087	0	1
dept36	575	.0121739	.1097573	0	1
dept37	575	.0226087	.1487819	0	1
dept38	575	.0086957	.092925	0	1
dept39	575	.0330435	.1789058	0	1
dept40	575	.053913	.2260427	0	1
dept41	575	.0469565	.2117299	0	1
dept42	575	.0243478	.1542608	0	1
quintD	575	2.85913	1.396605	1	5
quintDTOP	575	.16	.3669253	0	1
quintD2ND	575	.2034783	.4029357	0	1
quintDMID	575	.2017391	.4016479	0	1
quintD4TH	575	.2052174	.404212	0	1
quintDBOT	575	.2295652	.4209194	0	1

```
.
. * NINE CRUCIAL SPECIFICATION STEPS SHOWN BELOW (SEVERAL MORE MODELS CONSIDERED)
. * GOAL: FINAL MODEL SHOULD HAVE STRONG EXPLANATORY POWER (R-SQUARED VALUE), BUT
PRODUCE ESTIMATES
. *       THAT ARE RELIABLE (LOW OMITTED VAR BIAS) AND STATISTICALLY EFFICIENT (LOW
. *       MULTICOLLINEARITY). OFTEN THERE ARE TRADE-OFFS BTN OVB AND
MULTICOLLINEARITY, SO
. *       ALTERNATIVE SPECIFICATIONS ARE EXAMINED.
. * NOTE: SIMPLE CORRELATIONS ARE REPORTED IN THE OUTPUT OF THE PROGRAM
"CORRELATIONS".
. * NOTE: "SS" INDICATES "STATISTICALLY SIGNIFICANT"

. * STEP 1: BASE MODEL
. * THE VARS IN THE BASE MODEL ARE EXPERIENCE, PRODUCTIVITY, AND DISCIPLINE VARS
THAT BELONG IN ALL MODELS
. * VIF VALUES INDICATE LOW MULTICOLLINEARITY
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth ///
>                 quintTOP quint2ND quintMID profship saladj seadj, vce(robust)

Linear regression                               Number of obs     =        575
                                                F(15, 559)        =     105.68
```

SPECIFICATION STEPS

			Prob > F	=	0.0000
			R-squared	=	0.7235
			Root MSE	=	.14124

lmorate	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0096896	.0127752	0.76	0.448	-.0154037	.0347828
asian	.0300274	.0172127	1.74	0.082	-.0037821	.0638369
black	.0357315	.0219879	1.63	0.105	-.0074575	.0789205
hisp	-.0121166	.0251872	-0.48	0.631	-.0615898	.0373566
cupa000	.0790024	.0028918	27.32	0.000	.0733223	.0846824
full	.2274834	.0250428	9.08	0.000	.1782939	.2766729
assoc	.0706437	.0194378	3.63	0.000	.0324636	.1088239
yrsniu	-.0003079	.0010009	-0.31	0.759	-.0022738	.0016581
yrsoth	.0082752	.0019338	4.28	0.000	.0044768	.0120737
quintTOP	.0312521	.0167403	1.87	0.062	-.0016294	.0641336
quint2ND	.0270241	.0162393	1.66	0.097	-.0048734	.0589217
quintMID	.0150677	.0158874	0.95	0.343	-.0161385	.046274
profship	.0770364	.0213971	3.60	0.000	.035008	.1190649
saladj	.0257892	.0268449	0.96	0.337	-.0269401	.0785184
seadj	.0507989	.0166291	3.05	0.002	.0181358	.0834619
_cons	8.130538	.0323619	251.24	0.000	8.066972	8.194104

```
. estat vif
```

Variable	VIF	1/VIF
full	3.57	0.280026
assoc	2.27	0.441201
yrsniu	1.87	0.533884
profship	1.27	0.786560
quintTOP	1.23	0.809832
quintMID	1.21	0.825591
quint2ND	1.21	0.826821
yrsoth	1.19	0.838196
seadj	1.15	0.870528
female	1.08	0.929370
cupa000	1.06	0.947862
asian	1.04	0.960806
black	1.04	0.962414
saladj	1.03	0.973715
hisp	1.02	0.976990
Mean VIF	1.42	

```
.
. * IN THE FOLLOWING STEPS WE CONSIDER ADDITIONAL VARIABLES AND WATCH FOR
. * THEIR CONTRIBUTION TO THE EXPLANATORY POWER OF THE MODEL, AS WELL AS
. * POTENTIAL MULTICOLLINEARITY AND OVB
.
. * STEP 2: AGE ADDED, NOT SS
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth  ///
>                 quintTOP quint2ND quintMID profship saladj seadj age, vce(robust)

Linear regression                               Number of obs     =        575
                                                F(16, 558)        =      99.16
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7242
                                                Root MSE          =     .14119
```

```
------------------------------------------------------------------------------
             |               Robust
     lmorate |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .0109283   .0127229     0.86   0.391    -.0140623    .0359188
       asian |   .0292396   .0172416     1.70   0.090    -.0046267     .063106
       black |   .0383599   .0222559     1.72   0.085    -.0053558    .0820755
        hisp |  -.0054661   .0253032    -0.22   0.829    -.0551673     .044235
     cupa000 |   .0790169   .0028793    27.44   0.000     .0733614    .0846725
        full |   .2308048   .0253875     9.09   0.000      .180938    .2806715
       assoc |   .0731766   .0197116     3.71   0.000     .0344585    .1118947
      yrsniu |   .0007054   .0013495     0.52   0.601    -.0019454    .0033562
      yrsoth |   .0091917   .0020511     4.48   0.000     .0051628    .0132206
    quintTOP |   .0311105   .0166855     1.86   0.063    -.0016636    .0638845
    quint2ND |    .026608   .0162556     1.64   0.102    -.0053218    .0585377
    quintMID |   .0152092   .0158918     0.96   0.339    -.0160058    .0464243
    profship |   .0771948   .0212918     3.63   0.000     .0353729    .1190167
      saladj |   .0244974   .0266248     0.92   0.358    -.0277996    .0767944
       seadj |   .0487704   .0168879     2.89   0.004     .0155989     .081942
         age |  -.0012216   .0010779    -1.13   0.258    -.0033388    .0008957
       _cons |   8.173477   .0489146   167.10   0.000     8.077398    8.269557
------------------------------------------------------------------------------

. estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
        full |      3.62    0.276199
      yrsniu |      3.40    0.293931
         age |      3.07    0.326181
       assoc |      2.30    0.435067
      yrsoth |      1.47    0.681574
    profship |      1.27    0.786537
    quintTOP |      1.23    0.809791
    quintMID |      1.21    0.825548
    quint2ND |      1.21    0.826442
       seadj |      1.16    0.865476
      female |      1.08    0.922860
     cupa000 |      1.06    0.947842
        hisp |      1.05    0.950524
       black |      1.04    0.957281
       asian |      1.04    0.959324
      saladj |      1.03    0.972748
-------------+----------------------
    Mean VIF |      1.64

.
. * STEP 3: AGE RETAINED, SALSTART ADDED, NOT SS
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth ///
>                 quintTOP quint2ND quintMID profship saladj seadj age salstart,
vce(robust)

Linear regression                               Number of obs     =        570
                                                F(17, 552)        =      91.75
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7249
                                                Root MSE          =     .14125

------------------------------------------------------------------------------
             |               Robust
     lmorate |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
```

SPECIFICATION STEPS

female	.0068464	.0129961	0.53	0.599	-.0186815	.0323743
asian	.0295334	.0171342	1.72	0.085	-.0041228	.0631896
black	.0393263	.0221687	1.77	0.077	-.0042191	.0828717
hisp	-.0015463	.0256424	-0.06	0.952	-.0519149	.0488224
cupa000	.0789204	.0029412	26.83	0.000	.0731431	.0846977
full	.2327831	.0258779	9.00	0.000	.181952	.2836143
assoc	.072049	.019976	3.61	0.000	.0328107	.1112872
yrsniu	.0012208	.0014294	0.85	0.393	-.001587	.0040286
yrsoth	.0092508	.0020682	4.47	0.000	.0051882	.0133134
quintTOP	.0303135	.0168004	1.80	0.072	-.002687	.063314
quint2ND	.0258275	.0163845	1.58	0.116	-.0063561	.0580112
quintMID	.0174888	.0160154	1.09	0.275	-.0139698	.0489474
profship	.074018	.0218182	3.39	0.001	.0311612	.1168749
saladj	.0236675	.0272103	0.87	0.385	-.0297809	.077116
seadj	.0464676	.0171147	2.72	0.007	.0128497	.0800854
age	-.0011968	.001073	-1.12	0.265	-.0033046	.0009109
salstart	-2.60e-06	2.07e-06	-1.26	0.210	-6.66e-06	1.47e-06
_cons	8.189158	.0506178	161.78	0.000	8.089731	8.288585

```
. estat vif
```

Variable	VIF	1/VIF
yrsniu	3.85	0.259416
full	3.66	0.273136
age	3.07	0.325369
assoc	2.32	0.431618
yrsoth	1.46	0.683418
salstart	1.36	0.737060
profship	1.28	0.782076
quintTOP	1.24	0.808950
quintMID	1.21	0.826735
quint2ND	1.21	0.827773
seadj	1.16	0.861527
female	1.10	0.910483
cupa000	1.06	0.939571
hisp	1.06	0.944088
black	1.05	0.955832
asian	1.04	0.958377
saladj	1.03	0.971707
Mean VIF	1.66	

```
.
.
. * AGE IS NOT SS IN VARIATIONS OF THE SPECIFICATIONS BELOW,
. * SO SPECIFICATIONS INCLUDING AGE ARE NOT SHOWN BELOW
.
. * STEP 4: SALSTART RETAINED, AGE DROPPED
. *         SALSTART NOT SS
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth ///
>                 quintTOP quint2ND quintMID profship saladj seadj salstart,
vce(robust)

Linear regression                               Number of obs     =        570
                                                F(16, 553)        =      97.40
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7242
                                                Root MSE          =      .1413
```

lmorate	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0056567	.013048	0.43	0.665	-.019973	.0312864
asian	.030346	.017116	1.77	0.077	-.0032744	.0639664
black	.0367689	.021887	1.68	0.094	-.006223	.0797607
hisp	-.0081264	.0255566	-0.32	0.751	-.0583264	.0420735
cupa000	.0789051	.0029551	26.70	0.000	.0731005	.0847096
full	.2296541	.0255458	8.99	0.000	.1794756	.2798327
assoc	.0697308	.0197341	3.53	0.000	.0309678	.1084938
yrsniu	.0002109	.0011084	0.19	0.849	-.0019662	.002388
yrsoth	.0083519	.0019504	4.28	0.000	.0045209	.0121829
quintTOP	.0305224	.0168553	1.81	0.071	-.0025859	.0636307
quint2ND	.0262107	.0163695	1.60	0.110	-.0059433	.0583647
quintMID	.0174534	.0160158	1.09	0.276	-.0140058	.0489126
profship	.0738996	.02191	3.37	0.001	.0308626	.1169366
saladj	.0250106	.0273814	0.91	0.361	-.0287736	.0787948
seadj	.048528	.0168424	2.88	0.004	.015445	.081611
salstart	-2.53e-06	2.07e-06	-1.23	0.221	-6.59e-06	1.53e-06
_cons	8.146597	.0344695	236.34	0.000	8.07889	8.214304

```
. estat vif
```

Variable	VIF	1/VIF
full	3.62	0.276578
assoc	2.29	0.436877
yrsniu	2.26	0.441603
salstart	1.36	0.737804
profship	1.28	0.782090
quintTOP	1.24	0.809044
quintMID	1.21	0.826738
quint2ND	1.21	0.828107
yrsoth	1.19	0.840238
seadj	1.15	0.866950
female	1.09	0.916566
cupa000	1.06	0.939593
asian	1.04	0.960027
black	1.04	0.960919
hisp	1.03	0.970934
saladj	1.03	0.972802
Mean VIF	1.44	

```
.
. * STEP 5: SALSTART RETAINED, RKST_FULL AND RKST_ASSOC ADDED
. *         ALL THREE NOT SS
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth  ///
>                 quintTOP quint2ND quintMID profship saladj seadj salstart ///
>                 RKST_FULL RKST_ASSOC, vce(robust)

Linear regression                               Number of obs     =        570
                                                F(18, 551)        =      89.12
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7262
                                                Root MSE          =     .14104
```

lmorate	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]

```
-------------+----------------------------------------------------------------
      female |   .0064611   .0131043     0.49   0.622    -.0192793    .0322015
       asian |    .031192   .0169812     1.84   0.067    -.0021638    .0645478
       black |   .0384855   .0215651     1.78   0.075    -.0038744    .0808454
        hisp |  -.0061736   .0257175    -0.24   0.810      -.05669    .0443428
     cupa000 |   .0793244    .002923    27.14   0.000     .0735827     .085066
        full |   .2246478   .0244427     9.19   0.000     .1766356      .27266
       assoc |   .0683119   .0191691     3.56   0.000     .0306584    .1059654
      yrsniu |   .0003372   .0010994     0.31   0.759    -.0018222    .0024967
      yrsoth |   .0056793   .0035059     1.62   0.106    -.0012072    .0125657
    quintTOP |   .0315242   .0168723     1.87   0.062    -.0016177    .0646661
    quint2ND |   .0258052   .0165908     1.56   0.120    -.0067838    .0583942
    quintMID |   .0174475   .0159659     1.09   0.275     -.013914     .048809
    profship |   .0705146   .0218853     3.22   0.001     .0275258    .1135035
      saladj |   .0241865   .0263898     0.92   0.360    -.0276505    .0760234
       seadj |   .0498227   .0169821     2.93   0.003     .0164651    .0831802
    salstart |  -2.55e-06   2.14e-06    -1.19   0.233    -6.76e-06    1.65e-06
   RKST_FULL |   .1009709   .0843652     1.20   0.232    -.0647458    .2666876
  RKST_ASSOC |   .0182578    .032524     0.56   0.575    -.0456283     .082144
       _cons |   8.144931   .0344335   236.54   0.000     8.077294    8.212568
------------------------------------------------------------------------------
```

```
. estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
        full |      3.77    0.265473
       assoc |      2.31    0.432822
      yrsniu |      2.29    0.436506
      yrsoth |      2.24    0.445969
   RKST_FULL |      1.87    0.534941
  RKST_ASSOC |      1.61    0.619734
    salstart |      1.36    0.737717
    profship |      1.30    0.770891
    quintTOP |      1.24    0.807079
    quint2ND |      1.22    0.820978
    quintMID |      1.21    0.824857
       seadj |      1.16    0.860902
      female |      1.10    0.911328
     cupa000 |      1.07    0.930987
       asian |      1.05    0.954008
       black |      1.04    0.959996
        hisp |      1.03    0.967490
      saladj |      1.03    0.971145
-------------+----------------------
    Mean VIF |      1.55

.
. * STEP 6: RKSTART_FULL AND RKSTART_ASSOC RETAINED, SALSTART DROPPED
. *         RKSTART_FULL AND RKSTART_ASSOC NOT SS
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth  ///
>                 quintTOP quint2ND quintMID profship saladj seadj RKST_FULL
RKST_ASSOC, vce(robust)

Linear regression                               Number of obs     =        575
                                                F(17, 557)        =      96.05
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7256
                                                Root MSE          =     .14095

------------------------------------------------------------------------------
             |               Robust
```

SPECIFICATION STEPS

lmorate	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0104255	.0127488	0.82	0.414	-.014616	.035467
asian	.0309011	.0170817	1.81	0.071	-.0026513	.0644534
black	.037267	.021536	1.73	0.084	-.0050347	.0795687
hisp	-.0101224	.0253638	-0.40	0.690	-.0599427	.0396979
cupa000	.0793831	.0028642	27.72	0.000	.0737571	.0850091
full	.2227973	.0239333	9.31	0.000	.1757868	.2698078
assoc	.0693525	.0188931	3.67	0.000	.0322421	.106463
yrsniu	-.0001998	.0009906	-0.20	0.840	-.0021456	.001746
yrsoth	.0055341	.0034615	1.60	0.110	-.0012651	.0123334
quintTOP	.0322925	.0167304	1.93	0.054	-.0005699	.0651549
quint2ND	.0267171	.0164754	1.62	0.105	-.0056443	.0590785
quintMID	.0154924	.015864	0.98	0.329	-.0156682	.0466531
profship	.0730823	.0214508	3.41	0.001	.030948	.1152167
saladj	.025033	.0257405	0.97	0.331	-.0255274	.0755934
seadj	.0521237	.0167219	3.12	0.002	.019278	.0849693
RKST_FULL	.103415	.0856805	1.21	0.228	-.0648815	.2717114
RKST_ASSOC	.0201583	.0319704	0.63	0.529	-.0426391	.0829556
_cons	8.12913	.0319986	254.05	0.000	8.066277	8.191982

```
. estat vif
```

Variable	VIF	1/VIF
full	3.70	0.270383
assoc	2.28	0.437659
yrsoth	2.21	0.452500
yrsniu	1.89	0.527899
RKST_FULL	1.83	0.545979
RKST_ASSOC	1.59	0.630630
profship	1.29	0.773778
quintTOP	1.24	0.807997
quint2ND	1.22	0.819392
quintMID	1.22	0.822851
seadj	1.16	0.865006
female	1.08	0.924985
cupa000	1.06	0.939631
asian	1.05	0.955233
black	1.04	0.961596
saladj	1.03	0.972100
hisp	1.03	0.973692
Mean VIF	1.52	

```
.
. * STEP 7: RKYRS ADDED TO SALSTART, RKST_FULL, AND RKST_ASSOC
. *         RKST_FULL, RKST_ASSOC, SALSTART NOT SS
. *                 RKYRS WEAKLY SS AT P=.08, SO CONSIDER FURTHER
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth  ///
>                 quintTOP quint2ND quintMID profship saladj seadj ///
>                 salstart RKST_FULL RKST_ASSOC rkyrs, vce(robust)

Linear regression                               Number of obs     =        570
                                                F(19, 550)        =      86.21
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7277
                                                Root MSE          =     .14079

------------------------------------------------------------------------------
             |               Robust
```

SPECIFICATION STEPS

lmorate	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0071875	.013111	0.55	0.584	-.0185663	.0329413
asian	.0314151	.0170492	1.84	0.066	-.0020745	.0649047
black	.041088	.0222079	1.85	0.065	-.0025347	.0847106
hisp	-.003758	.025962	-0.14	0.885	-.0547548	.0472388
cupa000	.0792392	.0029115	27.22	0.000	.0735201	.0849582
full	.2565428	.0303406	8.46	0.000	.1969452	.3161405
assoc	.0859714	.0225256	3.82	0.000	.0417247	.1302181
yrsniu	-.0019145	.0016795	-1.14	0.255	-.0052136	.0013845
yrsoth	.0049423	.0035733	1.38	0.167	-.0020766	.0119612
quintTOP	.0316929	.0168603	1.88	0.061	-.0014256	.0648114
quint2ND	.0249638	.0165273	1.51	0.132	-.0075006	.0574282
quintMID	.0174583	.0158435	1.10	0.271	-.0136629	.0485795
profship	.070133	.0216406	3.24	0.001	.0276247	.1126414
saladj	.0245567	.0271301	0.91	0.366	-.0287346	.0778481
seadj	.0511746	.016836	3.04	0.002	.0181038	.0842453
salstart	-2.72e-06	2.13e-06	-1.28	0.203	-6.90e-06	1.47e-06
RKST_FULL	.069129	.0846857	0.82	0.415	-.0972179	.2354759
RKST_ASSOC	.0100645	.0317632	0.32	0.751	-.0523275	.0724565
rkyrs	.0037529	.0021396	1.75	0.080	-.0004498	.0079556
_cons	8.14292	.0344319	236.49	0.000	8.075286	8.210554

```
. estat vif
```

Variable	VIF	1/VIF
yrsniu	5.98	0.167303
full	5.97	0.167399
rkyrs	3.35	0.298475
assoc	3.07	0.326255
yrsoth	2.33	0.429571
RKST_FULL	2.12	0.470886
RKST_ASSOC	1.66	0.602263
salstart	1.36	0.735540
profship	1.30	0.770828
quintTOP	1.24	0.807051
quint2ND	1.22	0.820241
quintMID	1.21	0.824857
seadj	1.16	0.859823
female	1.10	0.910277
cupa000	1.07	0.930665
asian	1.05	0.953950
black	1.04	0.957538
hisp	1.04	0.965771
saladj	1.03	0.971106
Mean VIF	2.02	

```
.
. * STEP 8: RETAIN RKYRS, DROP SALSTART, RKSTART_FULL, AND RKSTART_ASSOC
. *         RKYRS SS AT P=.048
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsoth  ///
>                 quintTOP quint2ND quintMID profship saladj seadj ///
>                 rkyrs, vce(robust)

Linear regression                               Number of obs     =        575
                                                F(16, 558)        =     102.50
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7259
                                                Root MSE          =     .14073
```

lmorate	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0111123	.0127476	0.87	0.384	-.0139268	.0361514
asian	.0308523	.0172417	1.79	0.074	-.0030141	.0647188
black	.0395127	.0226126	1.75	0.081	-.0049036	.083929
hisp	-.0084378	.0254323	-0.33	0.740	-.0583925	.0415169
cupa000	.0790218	.0028637	27.59	0.000	.0733968	.0846467
full	.2642621	.0333437	7.93	0.000	.1987677	.3297566
assoc	.091768	.0240926	3.81	0.000	.0444447	.1390914
yrsniu	-.0030527	.0017442	-1.75	0.081	-.0064787	.0003733
yrsoth	.0062619	.0023364	2.68	0.008	.0016727	.0108511
quintTOP	.0320596	.0167019	1.92	0.055	-.0007467	.064866
quint2ND	.0260371	.0161271	1.61	0.107	-.0056402	.0577145
quintMID	.0151361	.0157101	0.96	0.336	-.0157221	.0459942
profship	.0751805	.0209305	3.59	0.000	.0340683	.1162927
saladj	.0262438	.0272464	0.96	0.336	-.0272742	.0797618
seadj	.0533389	.0163761	3.26	0.001	.0211726	.0855051
rkyrs	.0045993	.0023258	1.98	0.048	.0000309	.0091677
_cons	8.126284	.0322682	251.84	0.000	8.062902	8.189665

```
. estat vif
```

Variable	VIF	1/VIF
full	5.30	0.188643
yrsniu	5.07	0.197136
rkyrs	2.94	0.340336
assoc	2.90	0.344791
yrsoth	1.57	0.636812
profship	1.27	0.785660
quintTOP	1.24	0.809449
quintMID	1.21	0.825588
quint2ND	1.21	0.826213
seadj	1.15	0.868262
female	1.08	0.926911
cupa000	1.06	0.947852
black	1.04	0.959378
asian	1.04	0.960342
saladj	1.03	0.973681
hisp	1.03	0.974622
Mean VIF	1.88	

```
.
. * OF THE FOUR VARS CONSIDERED ABOVE, RKYRS SEEMS PROMISING, WHILE OTHERS ARE
CONSISTENTLY NOT SS
.
. * NOW USE THE ABOVE SPECIFICATION AND ADD SQUARED TERMS FOR THE EXPERIENCE
VAIABLES
. * STEP 9: KEEP RKYRS, ADD YRSNIU2 AND YRSOTH2
. *         YRSNIU, YRSNIU2 SS; YRSOTH AND YRSOTH2 NOT SS; RKYRS NOT SS
. *         ADDING SQUARED TERMS INCREASES VIF VALUES FOR FULL AND YRSOTH
. *         (AS WELL AS THE SQUARED TERMS AS EXPECTED)
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsniu2 yrsoth yrsoth2  ///
>                 quintTOP quint2ND quintMID profship saladj seadj ///
>                 rkyrs, vce(robust)

Linear regression                               Number of obs     =        575
```

SPECIFICATION STEPS

F(18, 556)	= 99.50
Prob > F	= 0.0000
R-squared	= 0.7375
Root MSE	= .13797

lmorate	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
female	.0210239	.0127113	1.65	0.099	-.0039442	.0459919
asian	.0304603	.016889	1.80	0.072	-.0027138	.0636344
black	.0485152	.0219338	2.21	0.027	.0054319	.0915985
hisp	-.0150629	.0263544	-0.57	0.568	-.0668293	.0367035
cupa000	.0793982	.0027445	28.93	0.000	.0740073	.0847891
full	.3169201	.0346706	9.14	0.000	.2488188	.3850214
assoc	.1442294	.0250741	5.75	0.000	.0949777	.193481
yrsniu	-.016033	.0030515	-5.25	0.000	-.0220269	-.0100391
yrsniu2	.0003944	.0000805	4.90	0.000	.0002362	.0005526
yrsoth	.0029341	.0029287	1.00	0.317	-.0028186	.0086868
yrsoth2	.0002481	.0001521	1.63	0.103	-.0000507	.0005469
quintTOP	.0320425	.0159546	2.01	0.045	.0007039	.0633811
quint2ND	.0279165	.0159546	1.75	0.081	-.0034221	.0592551
quintMID	.0218007	.0153375	1.42	0.156	-.0083259	.0519272
profship	.0796057	.0189354	4.20	0.000	.0424121	.1167994
saladj	.0326446	.0267002	1.22	0.222	-.0198009	.0850902
seadj	.0593532	.0160396	3.70	0.000	.0278477	.0908588
rkyrs	.0026818	.0026088	1.03	0.304	-.0024425	.0078061
_cons	8.159059	.0323258	252.40	0.000	8.095564	8.222555

```
. estat vif
```

Variable	VIF	1/VIF
yrsniu	23.26	0.042997
yrsniu2	16.32	0.061276
full	6.44	0.155188
yrsoth2	4.53	0.220534
yrsoth	4.30	0.232545
assoc	3.96	0.252304
rkyrs	3.33	0.300571
profship	1.28	0.780063
quintTOP	1.24	0.808982
quintMID	1.22	0.819171
quint2ND	1.21	0.823831
seadj	1.18	0.844571
female	1.11	0.899990
cupa000	1.06	0.946214
black	1.05	0.954818
asian	1.04	0.960174
saladj	1.03	0.972076
hisp	1.03	0.972404
Mean VIF	4.14	

```
.
. * STEP 10: RETAIN YRSNIU2 AND YRSOTH2, DROP RKYRS
. *               YRSNIU, YRSNIU2, YRSOTH2 HIGHLY SS; YYRSOTH DOES NOT DIFFER SS FROM
ZERO
. *                  DROPPING RKYRS LOWERS THE HIGH VIF VALUES OF THE NON-SQUARED
VARIABLES
. regress lmorate female asian black hisp ///
>                 cupa00 full assoc yrsniu yrsniu2 yrsoth yrsoth2  ///
```

SPECIFICATION STEPS

```
> quintTOP quint2ND quintMID profship saladj seadj, vce(robust)

Linear regression                               Number of obs     =        575
                                                F(17, 557)        =     103.92
                                                Prob > F          =     0.0000
                                                R-squared         =     0.7368
                                                Root MSE          =     .13804

------------------------------------------------------------------------------
             |               Robust
     lmorate |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      female |   .0205302   .0127592     1.61   0.108    -.0045319    .0455922
       asian |    .029944   .0167988     1.78   0.075    -.0030526    .0629407
       black |   .0466523   .0215635     2.16   0.031     .0042965     .089008
        hisp |  -.0175523   .0261718    -0.67   0.503    -.0689598    .0338552
     cupa000 |   .0794332   .0027479    28.91   0.000     .0740357    .0848306
        full |    .297648   .0280059    10.63   0.000      .242638     .352658
       assoc |   .1337549   .0216264     6.18   0.000     .0912756    .1762343
      yrsniu |  -.0148027   .0029618    -5.00   0.000    -.0206205    -.008985
     yrsniu2 |   .0004044   .0000799     5.06   0.000     .0002474    .0005614
      yrsoth |   .0029934   .0029425     1.02   0.309    -.0027864    .0087733
     yrsoth2 |   .0003188   .0001349     2.36   0.018     .0000538    .0005837
    quintTOP |   .0314842   .0158891     1.98   0.048     .0002742    .0626941
    quint2ND |   .0282328   .0160126     1.76   0.078    -.0032196    .0596851
    quintMID |    .021906   .0154111     1.42   0.156    -.0083649    .0521769
    profship |    .081427   .0191108     4.26   0.000     .0438889     .118965
      saladj |   .0325492   .0261861     1.24   0.214    -.0188864    .0839848
       seadj |   .0570734   .0159486     3.58   0.000     .0257467    .0884001
       _cons |   8.162889   .0319071   255.83   0.000     8.100216    8.225562
------------------------------------------------------------------------------

. estat vif

    Variable |       VIF       1/VIF
-------------+----------------------
      yrsniu |     21.12    0.047355
     yrsniu2 |     16.17    0.061852
        full |      4.86    0.205680
      yrsoth |      4.30    0.232604
     yrsoth2 |      4.04    0.247539
       assoc |      3.44    0.290315
    profship |      1.28    0.782918
    quintTOP |      1.24    0.809591
    quintMID |      1.22    0.819193
    quint2ND |      1.21    0.824037
       seadj |      1.18    0.850349
      female |      1.11    0.900919
     cupa000 |      1.06    0.946323
       black |      1.04    0.957248
       asian |      1.04    0.960778
      saladj |      1.03    0.972081
        hisp |      1.02    0.976002
-------------+----------------------
    Mean VIF |      3.90

.
. * THE ABOVE SPECIFICATION IS RETAINED AS THE FINAL MODEL USED FOR THE STUDY:
. * R-SQUARE IS GOOD, OMV LOW, AND VIF VALUES LOW.
.
. * HOWEVER, AS A CHECK OF HOW SENSITIVE THE FINDINGS REPORTED IN THE PAPER,
. * ALL FOUR OMITTED VARIABLES (AGE, RKST_FULL, RKST_ASSOC, RKYRS, AND SALSTART)
. * FINAL MODEL AND THE DECOMPOSITION ANALYSES RUN. THE FINDINGS ARE UNCHANGED.
```

```
. * SEE OUTPUT AND TABLES POSTED ONLINE.
.
. ********** CLOSE OUTPUT
. log close
      name:  <unnamed>
       log:
C:\Users\TA0VLW1\Documents\WORK\Faculty_Salary_Study\PROGRAMS\LMORATErob_tab1B-SPEC_
STEPS.log
  log type:  text
 closed on:  10 Mar 2018, 14:38:21
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