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Assignment 1
Review OLS

Due 28/1/2021

From the given data set, `assign1.dta`, estimate the following models:

Capital Asset Pricing Model (CAPM)

CAPM: $$r_{jt} = \alpha_j + \beta_{j1} r_{mt} + \varepsilon_{jt} \quad (1)$$

Fama & French three-factor Model (FF)

Fama & French: $$r_{jt} = \alpha_j + \beta_{j1} r_{mt} + \beta_{j2} r_{smbt} + \beta_{j3} r_{hmlt} + \varepsilon_{jt} \quad (2)$$

Carhart four-factor Model

Carhart: $$r_{jt} = \alpha_j + \beta_{j1} r_{mt} + \beta_{j2} r_{smbt} + \beta_{j3} r_{hmlt} + \beta_{j4} r_{wmlt} + \varepsilon_{jt} \quad (3)$$

Where: r_{jt} = excess return on mutual fund j at time t and j = 1, 2, …, 20.

r_{mt} = excess return on market portfolio at time t – representing market risk premium.

r_{smbt} = return on a small-stock portfolio minus the return on a large-stock portfolio (Small Minus Big) at time t – representing size premium.

r_{hmlt} = return on a value-stock portfolio minus the return on a growth-stock portfolio (High Minus Low) at time t – representing value premium.

r_{wmlt} = return on a winners portfolio minus the return on a losers portfolio (Winners Minus Losers) at time t – representing momentum premium.

(a) From CAPM, determine top 3 mutual fund in term of their performance based on Jensen Alpha. ① j = 4 ② j = 6 ③ j = 8

(b) From FF, determine top 3 mutual fund in term of their performance based on Jensen Alpha. ① j = 4 ② j = 6 ③ j = 5

(c) From Carhart, determine top 3 mutual fund in term of their performance based on Jensen Alpha. ① j = 5 ② j = 17 ③ j = 3

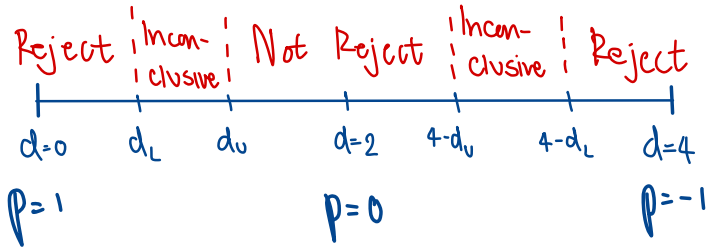
(d) From the estimated result of Carhart four-factor model (3) of mutual fund #1, evaluate whether there exist Autocorrelation and Multicollinearity problem or not? Which model between Carhart or FF should be employed in this case? Why? Also, make evaluation of the estimated results of Carhart model in term of (i) sign and meaning of the estimated coefficients; (ii) overall test; (iii) coefficient of determination; and (iv) individual test.

(e) Based on (a), (b), and (c), which result is the most appropriated one? Why?

(d) Autocorr

$H_0: \rho = 0$

$H_1: \rho \neq 0$



d-stat(5, 120) = 2.349188

K = 4 , n = 120

d_L = 1.5056

d_U = 1.6466 ; 4-d_U = 2.3534 ; d-stat falls within RR

∴ there is an evidence to support that there is no autocorrelation

Multicollinearity

① t-stat of $\hat{\beta}_{wml}$ is insignificant at all significance level

② Corr(r_1, rmrf) = 0.9000

Corr(r_1, smb) = 0.3065

Corr(r_1, hml) = -0.2709

Corr(r_1, wml) = -0.0779

Corr(rmrf smb) = 0.3499

Corr(rmrf hml) = -0.2829

Corr(rmrf wml) = -0.0237

Corr(smb hml) = -0.9514 ✱ high ✱

Corr(smb wml) = -0.0314

Corr(hml wml) = 0.0305

③ mean VIF = 6.11

∴ There may be some multicollinearity problem.

FF or Carhart ?

FF as β_{wml} is insignificant so it can be dropped.

Moreover, alpha is more significant when wml is dropped

Also, make evaluation of the estimated results of Carhart model in term of (i) sign and meaning of the estimated coefficients; (ii) overall test; (iii) coefficient of determination; and (iv) individual test.

$r_1 = .7176653 + 88.37442\ rmrf - 30.55523\ smb - 29.55418\ hml - 16.89643\ wml$

(.7344903) (14.132204) (15.20777) (14.55813) (11.85097)

$R^2 = 0.8198$ Prob > F = 0.0000

(i) The excess return on mutual fund#1 is estimated to increase by 88.37442 units on average if market risk premium increase by 1 unit

The excess return on mutual fund#1 is estimated to decrease by 30.55523 units on average if the size premium increases by 1 unit

The excess return on mutual fund#1 is estimated to decrease by 29.55418 units on average if the value premium increase by 1 unit

The excess return on mutual fund#1 is estimated to decrease by 16.89643 units on average if momentum premium increase by 1 unit

(ii) (iii) Prob > F = 0.0000 $R^2 = 0.8198$

; the F-test is significant, independent variables in the model can be used together to explain dependent variables significantly for ≈ 80%

(iv) all independent variables are significant at 95% confidence level except for momentum premium as it is insignificant at all level P>|t| = 0.157

(e) models from FF as both models of top 2 mutual fund based on alpha are significant at 95% confident level while other top mutual fund models from ① CAPM, significant at 90% confidence interval

② Carhart, not significant at all level (0.1, 0.05, 0.01)

Notes:
1. Unicode is supported; see help unicode advice.
2. More than 2 billion observations are allowed; see help obs advice.
3. Maximum number of variables is set to 5000; see help set_maxvar.

```
1 . log using "C:\Users\a\Desktop\426=A1.smcl"
```

```
      name:  <unnamed>
       log:  C:\Users\a\Desktop\426=A1.smcl
  log type:  smcl
 opened on:  27 Jan 2021, 09:57:50
```

```
2 . use "C:\Users\a\Downloads\assign1.dta"

3 . do "C:\Users\a\AppData\Local\Temp\STD511c_000000.tmp"

4 . set more off

5 . mat Alpha_CAPM=(0,9999)

6 . forvalue i=1(1)20 {
  2.  qui reg r`i' rmrf
  3.  est store capm`i'
  4.  mat beta=e(b)
  5.  sca a_capm`i'=el(beta,1,2)
  6.  mat Alpha_CAPM=(Alpha_CAPM \ `i',a_capm`i')
  7. }

7 . est table capm*, star(.1 .05 .01) stat(N rss F r2 r2_a)
```

Variable	capm1	capm2	capm3	capm4	capm5
rmrf	86.67481***	.33259034	79.458292***	71.566194***	89.883716***
_cons	-.28045261	.02705237	.04241345	.41910739*	.1533913
N	120	120	120	120	120
rss	408.66469	17.49366	608.13953	723.83913	444.17823
F	503.19828	.17308485	284.18142	193.68422	497.88063
r2	.81004455	.00146467	.70660007	.6214117	.80840443
r2_a	.80843476	-.00699749	.70411363	.61820332	.80678074

legend: * p<.1; ** p<.05; *** p<.01

Variable	capm6	capm7	capm8	capm9	capm10
rmrf	68.863747***	99.202503***	101.10416***	10.99266***	95.818659***
_cons	.2460271*	.06639442	.22738701	.03444878	.15557323
N	120	120	120	120	120
rss	259.81331	347.73031	406.34169	95.443848	1155.1959
F	499.62062	774.68148	688.60011	34.655976	217.55296
r2	.8089442	.86781399	.85370694	.22702011	.64834165
r2_a	.80732509	.86669377	.85246717	.22046943	.64536149

legend: * p<.1; ** p<.05; *** p<.01

Variable	capm11	capm12	capm13	capm14	capm15
rmrf	92.431281***	103.15122***	95.215162***	95.059925***	99.733614***
_cons	.19464246	.03145185	.13681104	.17849533	.09946436
N	120	120	120	120	120
rss	425.2018	298.82029	273.31705	271.52934	1344.5332
F	550.00079	974.67347	907.9584	910.95859	202.50328
r2	.8233535	.89200799	.88498559	.88532094	.63182904
r2_a	.8218565	.89109281	.88401089	.88434909	.62870894

legend: * p<.1; ** p<.05; *** p<.01

Variable	capm16	capm17	capm18	capm19	capm20
rmrf	96.735158***	103.90009***	91.703867***	91.012912***	90.702947***
_cons	.02742681	.03352088	.09933407	.00020766	.04748425
N	120	120	120	120	120
rss	431.54133	2003.3903	368.5193	513.53595	501.25227
F	593.56291	147.49821	624.64823	441.52533	449.26947
r2	.83416786	.55555256	.84110916	.78910696	.79198598
r2_a	.8327625	.55178605	.83976263	.78731973	.79022315

legend: * p<.1; ** p<.05; *** p<.01

```
8 . mat list Alpha_CAPM

Alpha_CAPM[21,2]
              c1          c2
 r1            0        9999
 r2            1  -.28045261
 r3            2   .02705237
 r4            3   .04241345
 r5            4   .41910739
 r6            5    .1533913
 r7            6    .2460271
 r8            7   .06639442
 r9            8   .22738701
r10            9   .03444878
r11           10   .15557323
r12           11   .19464246
r13           12   .03145185
r14           13   .13681104
r15           14   .17849533
r16           15   .09946436
r17           16   .02742681
r18           17   .03352088
r19           18   .09933407
r20           19   .00020766
r21           20   .04748425
```

```
 9 .
   end of do-file

10 . do "C:\Users\a\AppData\Local\Temp\STD511c_000000.tmp"

11 . set more off

12 . mat Alpha_FF=(0,9999)

13 . forvalue i=1(1)20 {
     2.  qui reg r`i' rmrf smb hml
     3.  est store ff`i'
     4.  mat beta=e(b)
     5.  sca a_ff`i'=el(beta,1,4)
     6.  mat Alpha_FF=(Alpha_FF \ `i',a_ff`i')
     7. }

14 . est table ff*, star(.1 .05 .01) stat(N rss F r2 r2_a)
```

Variable	ff1	ff2	ff3	ff4	ff5
rmrf	88.458388***	.15618323	75.024622***	61.286991***	82.28291***
smb	-30.483305**	.60757858	1.092207	53.954532***	17.510869
hml	-29.652027**	.01421362	-16.831267	23.318083	-9.8956295
_cons	-.30036799*	.02917021	.09651371	.54137257**	.24517545
N	120	120	120	120	120
rss	394.50442	17.442327	557.60582	576.53565	333.87253
F	172.19625	.17068035	105.06507	89.562091	229.82317
r2	.81662652	.00439475	.73098031	.69845558	.85598462
r2_a	.8118841	-.02135366	.7240229	.69065701	.85226008

legend: * p<.1; ** p<.05; *** p<.01

Variable	ff6	ff7	ff8	ff9	ff10
rmrf	65.828077***	99.363511***	99.933834***	12.587241***	88.602574***
smb	7.0524714	-4.2836123	4.2470385	-7.7456739	28.144644
hml	-3.8808586	-4.5338083	.35644319	-2.8606204	4.5713118
_cons	.28268096**	.06469084	.24142393	.01544377	.24200303
N	120	120	120	120	120
rss	242.26493	347.39698	404.13022	91.799415	1073.6006
F	178.37712	254.1311	227.08932	13.342101	79.645306
r2	.82184855	.86794071	.85450312	.25653561	.67318044
r2_a	.81724118	.86452538	.85074027	.23730809	.66472821

legend: * p<.1; ** p<.05; *** p<.01

Variable	ff11	ff12	ff13	ff14	ff15
rmrf	88.395815***	106.51349***	95.41369***	95.023693***	96.70656***
smb	21.866246	-16.608141	-9.3380346	-6.5211564	32.201686
hml	9.9841502	-6.3663201	-10.507753	-8.0541036	26.643361
_cons	.24259989	-.00860432	.13495997	.17933912	.13446597
N	120	120	120	120	120
rss	402.73013	282.71843	271.3924	270.18671	1328.344
F	192.44011	339.77687	299.90727	300.1817	67.63698
r2	.83268917	.89782712	.8857955	.885888	.63626209

r2_a	.82836216	.89518472	.88284194	.88293682	.62685507

legend: * p<.1; ** p<.05; *** p<.01

Variable	ff16	ff17	ff18	ff19	ff20
rmrf	91.734718***	97.066451***	87.040137***	84.999799***	84.673247***
smb	13.987945	44.444846	14.334871	12.156005	11.773332
hml	-3.5183434	25.898477	-1.7189686	-9.886029	-10.417874
_cons	.08765823	.11427555	.15543046	.07292389	.12042667
N	120	120	120	120	120
rss	386.84485	1941.3309	330.98711	441.74976	428.36742
F	221.44127	51.113897	232.28201	174.47532	178.84575
r2	.85134377	.56932029	.85729155	.81858729	.82223237
r2_a	.84749921	.55818203	.85360081	.81389558	.81763493

legend: * p<.1; ** p<.05; *** p<.01

```
15 . mat list Alpha_FF

Alpha_FF[21,2]
              c1          c2
 r1            0        9999
 r2            1  -.30036799
 r3            2   .02917021
 r4            3   .09651371
 r5            4   .54137257
 r6            5   .24517545
 r7            6   .28268096
 r8            7   .06469084
 r9            8   .24142393
r10            9   .01544377
r11           10   .24200303
r12           11   .24259989
r13           12  -.00860432
r14           13   .13495997
r15           14   .17933912
r16           15   .13446597
r17           16   .08765823
r18           17   .11427555
r19           18   .15543046
r20           19   .07292389
r21           20   .12042667

16 .
   end of do-file

17 . do "C:\Users\a\AppData\Local\Temp\STD511c_000000.tmp"

18 . set more off
```

```
19 . mat Alpha_CAR=(0,9999)

20 . forvalue i=1(1)20 {
     2.  qui reg r`i' rmrf smb hml wml
     3.  est store car`i'
     4.  mat beta=e(b)
     5.  sca a_car`i'=el(beta,1,5)
     6.  mat Alpha_CAR=(Alpha_CAR \ `i',a_car`i')
     7. }

21 . est table car*, star(.1 .05 .01) stat(N rss F r2 r2_a)
```

Variable	car1	car2	car3	car4	car5
rmrf	88.37442***	.17216893	74.961681***	61.414372***	82.211925***
smb	-30.555228**	.62127126	1.0382938	54.063641***	17.450066
hml	-29.554175**	-.00441541	-16.757917	23.169639	-9.8129059
wml	-16.896434	3.2167406	-12.665517	25.632471*	-14.28416
_cons	.71766532	-.16464281	.85962846	-1.0030189	1.1058157
N	120	120	120	120	120
rss	387.65219	17.193972	553.75558	560.76597	328.97529
F	130.8052	.54401476	78.862559	69.273695	173.85324
r2	.81981157	.01857085	.73283787	.70670357	.85809703
r2_a	.81354415	-.01556582	.72354528	.69650195	.85316128

legend: * p<.1; ** p<.05; *** p<.01

Variable	car6	car7	car8	car9	car10
rmrf	65.851692***	99.347739***	99.956602***	12.61187***	88.67622***
smb	7.0726993	-4.2971215	4.266541	-7.7245783	28.207726
hml	-3.9083788	-4.5154288	.32990977	-2.8893211	4.4854877
wml	4.7520146	-3.1736513	4.5816182	4.9558586	14.819552
_cons	-.00363444	.25590768	-.03462485	-.2831535	-.6508953
N	120	120	120	120	120
rss	241.72293	347.15523	403.62639	91.20992	1068.3294
F	132.99139	189.10684	169.0954	10.170241	59.653079
r2	.82224711	.8680326	.85468451	.26130981	.67478508
r2_a	.8160644	.86344243	.84963006	.23561624	.66347326

legend: * p<.1; ** p<.05; *** p<.01

Variable	car11	car12	car13	car14	car15
rmrf	88.493872***	106.54016***	95.452446***	95.059483***	96.765085***
smb	21.950238	-16.585297	-9.3048377	-6.4905003	32.251816
hml	9.8698788	-6.3973991	-10.552918	-8.0958114	26.575159
wml	19.731647	5.3665241	7.7987449	7.2018442	11.776732
_cons	-.94625889	-.33194474	-.3349251	-.25458186	-.57509829
N	120	120	120	120	120
rss	393.38536	282.02719	269.93261	268.94182	1325.0152
F	147.16777	253.32549	224.35281	224.36166	50.489
r2	.83657138	.89807693	.88640979	.88641377	.63717361
r2_a	.8308869	.89453178	.88245883	.88246294	.62455357

legend: * p<.1; ** p<.05; *** p<.01

Variable	car16	car17	car18	car19	car20
rmrf	91.676764***	97.002536***	87.064702***	84.946218***	84.624416***
smb	13.938304	44.390099	14.355913	12.11011	11.731505
hml	-3.4508061	25.97296	-1.7475961	-9.8235887	-10.360968
wml	-11.661906	-12.861352	4.943221	-10.781798	-9.8261046
_cons	.79030403	.88918966	-.14240538	.72254197	.71246294
N	120	120	120	120	120
rss	383.58062	1937.3606	330.40062	438.95963	426.05
F	166.29503	38.141745	173.06729	130.73574	133.85767
r2	.85259814	.57020108	.85754442	.8197331	.82319408
r2_a	.84747112	.55525155	.85258944	.81346295	.8170443

legend: * p<.1; ** p<.05; *** p<.01

```
22 . mat list Alpha_CAR

Alpha_CAR[21,2]
              c1          c2
 r1            0        9999
 r2            1    .71766532
 r3            2   -.16464281
 r4            3    .85962846
 r5            4   -1.0030189
 r6            5    1.1058157
 r7            6   -.00363444
 r8            7    .25590768
 r9            8   -.03462485
r10            9    -.2831535
r11           10    -.6508953
r12           11   -.94625889
r13           12   -.33194474
r14           13    -.3349251
r15           14   -.25458186
r16           15   -.57509829
r17           16    .79030403
r18           17    .88918966
r19           18   -.14240538
r20           19    .72254197
r21           20    .71246294

23 .
end of do-file

24 . mat Alpha_CAR=(0,0)

25 . reg r1 rmrf smb hml wml
```

Source	SS	df	MS		
Model	1763.719	4	440.92975	Number of obs	= 120
Residual	387.652185	115	3.37088857	F(4, 115)	= 130.81
				Prob > F	= 0.0000
				R-squared	= 0.8198
				Adj R-squared	= 0.8135
Total	2151.37118	119	18.0787494	Root MSE	= 1.836

r1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rmrf	**88.37442**	**4.132204**	**21.39**	**0.000**	**80.18932**	**96.55952**
smb	**-30.55523**	**15.20777**	**-2.01**	**0.047**	**-60.6789**	**-.4315607**
hml	**-29.55418**	**14.55813**	**-2.03**	**0.045**	**-58.39103**	**-.7173227**
wml	**-16.89643**	**11.8509**	**-1.43**	**0.157**	**-40.37078**	**6.57791**
_cons	**.7176653**	**.7344903**	**0.98**	**0.331**	**-.7372186**	**2.172549**

```
26 . est store car1

27 . mat beta=e(b)

28 . sca a_car1=el(beta,1,5)

29 . mat list beta

   beta[1,5]
             rmrf         smb         hml         wml       _cons
   y1    88.37442  -30.555228  -29.554175  -16.896434   .71766532

30 . mat list Alpha_CAR

   Alpha_CAR[1,2]
       c1  c2
   r1   0   0

31 . sca list a_car1
       a_car1 =  .71766532

32 . mat Alpha_CAR=(Alpha_CAR \ 1 ,a_car1)

33 . mat list Alpha_CAR

   Alpha_CAR[2,2]
              c1         c2
   r1          0          0
   r2          1  .71766532

34 . estat dwatson

   Durbin-Watson d-statistic(  5,   120) =  2.349188

35 . save "C:\Users\a\Desktop\A.1.dta"
   file C:\Users\a\Desktop\A.1.dta saved

36 . help reg

37 . corr(r1 , rmrf)
   invalid syntax
   r(198);
```

```
38 . corr(r1 rmrf)
(obs=120)
```

	r1	rmrf
r1	**1.0000**	
rmrf	**0.9000**	**1.0000**

```
39 . correlate
(obs=120)
```

	time	month	year	r1	r2	r3	r4	r5	r6
time	**1.0000**								
month	**0.0997**	**1.0000**							
year	**0.9950**	**0.0000**	**1.0000**						
r1	**-0.0935**	**0.0018**	**-0.0941**	**1.0000**					
r2	**-0.2045**	**-0.1617**	**-0.1893**	**-0.0069**	**1.0000**				
r3	**-0.1537**	**-0.0447**	**-0.1499**	**0.8431**	**0.0932**	**1.0000**			
r4	**-0.3075**	**-0.0750**	**-0.3015**	**0.7241**	**-0.0156**	**0.7524**	**1.0000**		
r5	**-0.1258**	**-0.0774**	**-0.1187**	**0.8599**	**0.0364**	**0.8276**	**0.7789**	**1.0000**	
r6	**-0.2187**	**-0.0438**	**-0.2154**	**0.8603**	**0.0266**	**0.8210**	**0.8440**	**0.8937**	**1.0000**
r7	**-0.1473**	**-0.0083**	**-0.1472**	**0.9319**	**-0.0142**	**0.8575**	**0.7930**	**0.8749**	**0.8989**
r8	**-0.1643**	**0.0073**	**-0.1658**	**0.9202**	**-0.0111**	**0.8620**	**0.7945**	**0.8768**	**0.8908**
r9	**-0.0697**	**0.0291**	**-0.0730**	**0.4188**	**0.1125**	**0.4128**	**0.3722**	**0.3578**	**0.4405**
r10	**-0.2148**	**-0.0992**	**-0.2060**	**0.7586**	**0.0304**	**0.7480**	**0.7301**	**0.8071**	**0.7916**
r11	**-0.2489**	**-0.0485**	**-0.2453**	**0.8474**	**0.0106**	**0.8127**	**0.8718**	**0.8775**	**0.9132**
r12	**-0.1498**	**-0.0473**	**-0.1458**	**0.9464**	**-0.0191**	**0.8450**	**0.7712**	**0.8797**	**0.9004**
r13	**-0.1688**	**-0.0656**	**-0.1631**	**0.9308**	**-0.0213**	**0.8659**	**0.7884**	**0.8984**	**0.9078**
r14	**-0.1674**	**-0.0667**	**-0.1615**	**0.9302**	**-0.0203**	**0.8669**	**0.7885**	**0.8995**	**0.9088**
r15	**-0.1381**	**-0.0407**	**-0.1347**	**0.7659**	**0.0582**	**0.7232**	**0.6356**	**0.7347**	**0.7046**
r16	**-0.1511**	**0.0097**	**-0.1528**	**0.9031**	**-0.0244**	**0.8789**	**0.8182**	**0.9043**	**0.8972**
r17	**-0.1408**	**-0.0357**	**-0.1379**	**0.7437**	**-0.1110**	**0.7110**	**0.6783**	**0.7216**	**0.7097**
r18	**-0.2019**	**-0.0500**	**-0.1979**	**0.8753**	**-0.0260**	**0.8188**	**0.8331**	**0.9201**	**0.9117**
r19	**-0.1408**	**-0.0616**	**-0.1353**	**0.8644**	**-0.0336**	**0.8460**	**0.8168**	**0.9071**	**0.8853**
r20	**-0.1448**	**-0.0587**	**-0.1397**	**0.8637**	**-0.0306**	**0.8491**	**0.8218**	**0.9044**	**0.8864**
rmrf	**-0.1683**	**-0.0883**	**-0.1603**	**0.9000**	**0.0383**	**0.8406**	**0.7883**	**0.8991**	**0.8994**
smb	**-0.1549**	**-0.0770**	**-0.1480**	**0.3065**	**0.0641**	**0.4337**	**0.5281**	**0.5175**	**0.4204**
hml	**0.1479**	**0.0806**	**0.1406**	**-0.2709**	**-0.0599**	**-0.3875**	**-0.4476**	**-0.4593**	**-0.3611**
wml	**-0.7115**	**-0.0949**	**-0.7056**	**-0.0779**	**0.1168**	**-0.0669**	**0.0657**	**-0.0727**	**-0.0042**
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_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	r7	r8	r9	r10	r11	r12	r13	r14	r15
r7	**1.0000**								
r8	**0.9935**	**1.0000**							
r9	**0.5253**	**0.5268**	**1.0000**						
r10	**0.7643**	**0.7691**	**0.3070**	**1.0000**					
r11	**0.9132**	**0.9078**	**0.4729**	**0.8416**	**1.0000**				
r12	**0.9646**	**0.9562**	**0.4422**	**0.7960**	**0.9106**	**1.0000**			
r13	**0.9668**	**0.9598**	**0.4585**	**0.7876**	**0.9060**	**0.9776**	**1.0000**		
r14	**0.9667**	**0.9602**	**0.4566**	**0.7912**	**0.9071**	**0.9781**	**0.9996**	**1.0000**	
r15	**0.8212**	**0.8120**	**0.4354**	**0.5426**	**0.7264**	**0.7975**	**0.8272**	**0.8242**	**1.0000**
r16	**0.9572**	**0.9615**	**0.4553**	**0.7904**	**0.9028**	**0.9307**	**0.9554**	**0.9559**	**0.8108**
r17	**0.7581**	**0.7510**	**0.3611**	**0.5971**	**0.7412**	**0.7413**	**0.7758**	**0.7746**	**0.6171**
r18	**0.9157**	**0.9111**	**0.4291**	**0.8087**	**0.9138**	**0.9231**	**0.9329**	**0.9334**	**0.7576**
r19	**0.9093**	**0.9083**	**0.4163**	**0.7474**	**0.8687**	**0.8825**	**0.9236**	**0.9218**	**0.7840**
r20	**0.9125**	**0.9117**	**0.4255**	**0.7505**	**0.8713**	**0.8840**	**0.9249**	**0.9233**	**0.7871**
rmrf	**0.9316**	**0.9240**	**0.4765**	**0.8052**	**0.9074**	**0.9445**	**0.9407**	**0.9409**	**0.7949**
smb	**0.3274**	**0.3497**	**0.0087**	**0.4291**	**0.4048**	**0.2605**	**0.3371**	**0.3400**	**0.3124**
hml	**-0.2683**	**-0.2868**	**0.0089**	**-0.3679**	**-0.3337**	**-0.2038**	**-0.2820**	**-0.2829**	**-0.2413**
wml	**-0.0318**	**-0.0092**	**0.0617**	**0.0171**	**0.0385**	**-0.0049**	**0.0021**	**0.0002**	**0.0107**
_est_capm1	.	.	.	.	.	.	.	.	.
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_est_car1	.	.	.	.	.	.	.	.	.

	r16	r17	r18	r19	r20	rmrf	smb	hml	wml
r16	**1.0000**								
r17	**0.7765**	**1.0000**							
r18	**0.9132**	**0.7399**	**1.0000**						
r19	**0.9451**	**0.7782**	**0.8901**	**1.0000**					
r20	**0.9474**	**0.7753**	**0.8912**	**0.9992**	**1.0000**				
rmrf	**0.9133**	**0.7454**	**0.9171**	**0.8883**	**0.8899**	**1.0000**			
smb	**0.4421**	**0.3608**	**0.4400**	**0.4699**	**0.4724**	**0.3499**	**1.0000**		
hml	**-0.3800**	**-0.2933**	**-0.3765**	**-0.4135**	**-0.4162**	**-0.2829**	**-0.9514**	**1.0000**	
wml	**-0.0603**	**-0.0498**	**-0.0090**	**-0.0592**	**-0.0565**	**-0.0237**	**-0.0314**	**0.0305**	**1.0000**
_est_capm1	.	.	.	.	.	.	.	.	.

_est_capm2	.	.	.	.	.	.	.	.	.
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_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	est~m1	_est_~m2	_est_~m3	_est_~m4	_est_~m5	_est_~m6	_est_~m7	_est_~m8	_est_~m9
_est_capm1	.								
_est_capm2	.	.							
_est_capm3	.	.	.						
_est_capm4	.	.	.	.					
_est_capm5	.	.	.	.	.				
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_est_capm7	.	.	.	.	.	.	.		
_est_capm8	.	.	.	.	.	.	.	.	
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_est_ff14	.	.	.	.	.	.	.	.	.
_est_ff15	.	.	.	.	.	.	.	.	.
_est_ff16	.	.	.	.	.	.	.	.	.
_est_ff17	.	.	.	.	.	.	.	.	.
_est_ff18	.	.	.	.	.	.	.	.	.
_est_ff19	.	.	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.	.	.
_est_car3	.	.	.	.	.	.	.	.	.
_est_car4	.	.	.	.	.	.	.	.	.
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_est_car10	.	.	.	.	.	.	.	.	.
_est_car11	.	.	.	.	.	.	.	.	.
_est_car12	.	.	.	.	.	.	.	.	.
_est_car13	.	.	.	.	.	.	.	.	.
_est_car14	.	.	.	.	.	.	.	.	.
_est_car15	.	.	.	.	.	.	.	.	.
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_est_car18	.	.	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	_est~m10	_est~m11	_est~m12	_est~m13	_est~m14	_est~m15	_est~m16	_est~m17	_est~m18
_est_capm10	.								
_est_capm11	.	.							
_est_capm12	.	.	.						
_est_capm13	.	.	.	.					
_est_capm14	.	.	.	.	.				
_est_capm15	.	.	.	.	.	.			
_est_capm16	.	.	.	.	.	.	.		
_est_capm17	.	.	.	.	.	.	.	.	
_est_capm18	.	.	.	.	.	.	.	.	.
_est_capm19	.	.	.	.	.	.	.	.	.
_est_capm20	.	.	.	.	.	.	.	.	.
_est_ff1	.	.	.	.	.	.	.	.	.
_est_ff2	.	.	.	.	.	.	.	.	.
_est_ff3	.	.	.	.	.	.	.	.	.
_est_ff4	.	.	.	.	.	.	.	.	.
_est_ff5	.	.	.	.	.	.	.	.	.
_est_ff6	.	.	.	.	.	.	.	.	.
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_est_ff11	.	.	.	.	.	.	.	.	.
_est_ff12	.	.	.	.	.	.	.	.	.
_est_ff13	.	.	.	.	.	.	.	.	.
_est_ff14	.	.	.	.	.	.	.	.	.
_est_ff15	.	.	.	.	.	.	.	.	.
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_est_ff19	.	.	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.	.	.
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_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	_est~m19	_est~m20	_est_ff1	_est_ff2	_est_ff3	_est_ff4	_est_ff5	_est_ff6	_est_ff7
_est_capm19	.								
_est_capm20	.	.							
_est_ff1	.	.	.						
_est_ff2	.	.	.	.					
_est_ff3	.	.	.	.	.				
_est_ff4	.	.	.	.	.	.			
_est_ff5	.	.	.	.	.	.	.		
_est_ff6	.	.	.	.	.	.	.	.	
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_est_ff11	.	.	.	.	.	.	.	.	.
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_est_ff15	.	.	.	.	.	.	.	.	.
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_est_ff18	.	.	.	.	.	.	.	.	.
_est_ff19	.	.	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.	.	.
_est_car3	.	.	.	.	.	.	.	.	.
_est_car4	.	.	.	.	.	.	.	.	.
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_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	_est_ff8	_est_ff9	_est~f10	_est~f11	_est~f12	_est~f13	_est~f14	_est~f15	_est~f16
_est_ff8	.								
_est_ff9	.	.							
_est_ff10	.	.	.						
_est_ff11	.	.	.	.					
_est_ff12	.	.	.	.	.				
_est_ff13	.	.	.	.	.	.			
_est_ff14	.	.	.	.	.	.	.		
_est_ff15	.	.	.	.	.	.	.	.	
_est_ff16	.	.	.	.	.	.	.	.	.
_est_ff17	.	.	.	.	.	.	.	.	.
_est_ff18	.	.	.	.	.	.	.	.	.
_est_ff19	.	.	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.	.	.
_est_car3	.	.	.	.	.	.	.	.	.
_est_car4	.	.	.	.	.	.	.	.	.
_est_car5	.	.	.	.	.	.	.	.	.
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_est_car9	.	.	.	.	.	.	.	.	.
_est_car10	.	.	.	.	.	.	.	.	.
_est_car11	.	.	.	.	.	.	.	.	.
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_est_car18	.	.	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	_est~f17	_est~f18	_est~f19	_est~f20	_est_~r2	_est_~r3	_est_~r4	_est_~r5	_est_~r6
_est_ff17	.								
_est_ff18	.	.							
_est_ff19	.	.	.						
_est_ff20	.	.	.	.					
_est_car2	.	.	.	.	.				
_est_car3	.	.	.	.	.	.			
_est_car4	.	.	.	.	.	.	.		
_est_car5	.	.	.	.	.	.	.	.	
_est_car6	.	.	.	.	.	.	.	.	.
_est_car7	.	.	.	.	.	.	.	.	.
_est_car8	.	.	.	.	.	.	.	.	.
_est_car9	.	.	.	.	.	.	.	.	.
_est_car10	.	.	.	.	.	.	.	.	.
_est_car11	.	.	.	.	.	.	.	.	.
_est_car12	.	.	.	.	.	.	.	.	.
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_est_car16	.	.	.	.	.	.	.	.	.
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_est_car18	.	.	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	est~r7	_est_~r8	_est_~r9	_est~r10	_est~r11	_est~r12	_est~r13	_est~r14	_est~r15
_est_car7	.								
_est_car8	.	.							
_est_car9	.	.	.						
_est_car10	.	.	.	.					
_est_car11	.	.	.	.	.				
_est_car12	.	.	.	.	.	.			
_est_car13	.	.	.	.	.	.	.		
_est_car14	.	.	.	.	.	.	.	.	
_est_car15	.	.	.	.	.	.	.	.	.
_est_car16	.	.	.	.	.	.	.	.	.
_est_car17	.	.	.	.	.	.	.	.	.
_est_car18	.	.	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.	.	.

	_est~r16	_est~r17	_est~r18	_est~r19	_est~r20	_est_~r1
_est_car16	.					
_est_car17	.	.				
_est_car18	.	.	.			
_est_car19	.	.	.	.		
_est_car20	.	.	.	.	.	
_est_car1	.	.	.	.	.	.

40 . pwcorr

	time	month	year	r1	r2	r3	r4
time	1.0000						
month	0.0997	1.0000					
year	0.9950	0.0000	1.0000				
r1	-0.0935	0.0018	-0.0941	1.0000			
r2	-0.2045	-0.1617	-0.1893	-0.0069	1.0000		
r3	-0.1537	-0.0447	-0.1499	0.8431	0.0932	1.0000	
r4	-0.3075	-0.0750	-0.3015	0.7241	-0.0156	0.7524	1.0000
r5	-0.1258	-0.0774	-0.1187	0.8599	0.0364	0.8276	0.7789
r6	-0.2187	-0.0438	-0.2154	0.8603	0.0266	0.8210	0.8440
r7	-0.1473	-0.0083	-0.1472	0.9319	-0.0142	0.8575	0.7930
r8	-0.1643	0.0073	-0.1658	0.9202	-0.0111	0.8620	0.7945
r9	-0.0697	0.0291	-0.0730	0.4188	0.1125	0.4128	0.3722
r10	-0.2148	-0.0992	-0.2060	0.7586	0.0304	0.7480	0.7301
r11	-0.2489	-0.0485	-0.2453	0.8474	0.0106	0.8127	0.8718
r12	-0.1498	-0.0473	-0.1458	0.9464	-0.0191	0.8450	0.7712
r13	-0.1688	-0.0656	-0.1631	0.9308	-0.0213	0.8659	0.7884
r14	-0.1674	-0.0667	-0.1615	0.9302	-0.0203	0.8669	0.7885
r15	-0.1381	-0.0407	-0.1347	0.7659	0.0582	0.7232	0.6356
r16	-0.1511	0.0097	-0.1528	0.9031	-0.0244	0.8789	0.8182
r17	-0.1408	-0.0357	-0.1379	0.7437	-0.1110	0.7110	0.6783
r18	-0.2019	-0.0500	-0.1979	0.8753	-0.0260	0.8188	0.8331
r19	-0.1408	-0.0616	-0.1353	0.8644	-0.0336	0.8460	0.8168
r20	-0.1448	-0.0587	-0.1397	0.8637	-0.0306	0.8491	0.8218
rmrf	-0.1683	-0.0883	-0.1603	0.9000	0.0383	0.8406	0.7883
smb	-0.1549	-0.0770	-0.1480	0.3065	0.0641	0.4337	0.5281
hml	0.1479	0.0806	0.1406	-0.2709	-0.0599	-0.3875	-0.4476
wml	-0.7115	-0.0949	-0.7056	-0.0779	0.1168	-0.0669	0.0657
_est_capm1	.	.	.	.	.	.	.
_est_capm2	.	.	.	.	.	.	.
_est_capm3	.	.	.	.	.	.	.
_est_capm4	.	.	.	.	.	.	.
_est_capm5	.	.	.	.	.	.	.
_est_capm6	.	.	.	.	.	.	.
_est_capm7	.	.	.	.	.	.	.
_est_capm8	.	.	.	.	.	.	.
_est_capm9	.	.	.	.	.	.	.
_est_capm10	.	.	.	.	.	.	.
_est_capm11	.	.	.	.	.	.	.
_est_capm12	.	.	.	.	.	.	.
_est_capm13	.	.	.	.	.	.	.
_est_capm14	.	.	.	.	.	.	.
_est_capm15	.	.	.	.	.	.	.
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_est_capm17	.	.	.	.	.	.	.
_est_capm18	.	.	.	.	.	.	.
_est_capm19	.	.	.	.	.	.	.
_est_capm20	.	.	.	.	.	.	.
_est_ff1	.	.	.	.	.	.	.
_est_ff2	.	.	.	.	.	.	.
_est_ff3	.	.	.	.	.	.	.
_est_ff4	.	.	.	.	.	.	.

	r5	r6	r7	r8	r9	r10	r11
_est_ff5	.	.	.	.	.	.	.
_est_ff6	.	.	.	.	.	.	.
_est_ff7	.	.	.	.	.	.	.
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_est_ff19	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.
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_est_car18	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.
r5	**1.0000**						
r6	**0.8937**	**1.0000**					
r7	**0.8749**	**0.8989**	**1.0000**				
r8	**0.8768**	**0.8908**	**0.9935**	**1.0000**			
r9	**0.3578**	**0.4405**	**0.5253**	**0.5268**	**1.0000**		
r10	**0.8071**	**0.7916**	**0.7643**	**0.7691**	**0.3070**	**1.0000**	
r11	**0.8775**	**0.9132**	**0.9132**	**0.9078**	**0.4729**	**0.8416**	**1.0000**
r12	**0.8797**	**0.9004**	**0.9646**	**0.9562**	**0.4422**	**0.7960**	**0.9106**
r13	**0.8984**	**0.9078**	**0.9668**	**0.9598**	**0.4585**	**0.7876**	**0.9060**
r14	**0.8995**	**0.9088**	**0.9667**	**0.9602**	**0.4566**	**0.7912**	**0.9071**
r15	**0.7347**	**0.7046**	**0.8212**	**0.8120**	**0.4354**	**0.5426**	**0.7264**
r16	**0.9043**	**0.8972**	**0.9572**	**0.9615**	**0.4553**	**0.7904**	**0.9028**
r17	**0.7216**	**0.7097**	**0.7581**	**0.7510**	**0.3611**	**0.5971**	**0.7412**
r18	**0.9201**	**0.9117**	**0.9157**	**0.9111**	**0.4291**	**0.8087**	**0.9138**
r19	**0.9071**	**0.8853**	**0.9093**	**0.9083**	**0.4163**	**0.7474**	**0.8687**
r20	**0.9044**	**0.8864**	**0.9125**	**0.9117**	**0.4255**	**0.7505**	**0.8713**
rmrf	**0.8991**	**0.8994**	**0.9316**	**0.9240**	**0.4765**	**0.8052**	**0.9074**
smb	**0.5175**	**0.4204**	**0.3274**	**0.3497**	**0.0087**	**0.4291**	**0.4048**
hml	**-0.4593**	**-0.3611**	**-0.2683**	**-0.2868**	**0.0089**	**-0.3679**	**-0.3337**
wml	**-0.0727**	**-0.0042**	**-0.0318**	**-0.0092**	**0.0617**	**0.0171**	**0.0385**
_est_capm1	.	.	.	.	.	.	.
_est_capm2	.	.	.	.	.	.	.
_est_capm3	.	.	.	.	.	.	.
_est_capm4	.	.	.	.	.	.	.
_est_capm5	.	.	.	.	.	.	.
_est_capm6	.	.	.	.	.	.	.

_est_capm7	.	.	.	.	.	.	.
_est_capm8	.	.	.	.	.	.	.
_est_capm9	.	.	.	.	.	.	.
_est_capm10	.	.	.	.	.	.	.
_est_capm11	.	.	.	.	.	.	.
_est_capm12	.	.	.	.	.	.	.
_est_capm13	.	.	.	.	.	.	.
_est_capm14	.	.	.	.	.	.	.
_est_capm15	.	.	.	.	.	.	.
_est_capm16	.	.	.	.	.	.	.
_est_capm17	.	.	.	.	.	.	.
_est_capm18	.	.	.	.	.	.	.
_est_capm19	.	.	.	.	.	.	.
_est_capm20	.	.	.	.	.	.	.
_est_ff1	.	.	.	.	.	.	.
_est_ff2	.	.	.	.	.	.	.
_est_ff3	.	.	.	.	.	.	.
_est_ff4	.	.	.	.	.	.	.
_est_ff5	.	.	.	.	.	.	.
_est_ff6	.	.	.	.	.	.	.
_est_ff7	.	.	.	.	.	.	.
_est_ff8	.	.	.	.	.	.	.
_est_ff9	.	.	.	.	.	.	.
_est_ff10	.	.	.	.	.	.	.
_est_ff11	.	.	.	.	.	.	.
_est_ff12	.	.	.	.	.	.	.
_est_ff13	.	.	.	.	.	.	.
_est_ff14	.	.	.	.	.	.	.
_est_ff15	.	.	.	.	.	.	.
_est_ff16	.	.	.	.	.	.	.
_est_ff17	.	.	.	.	.	.	.
_est_ff18	.	.	.	.	.	.	.
_est_ff19	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.
_est_car3	.	.	.	.	.	.	.
_est_car4	.	.	.	.	.	.	.
_est_car5	.	.	.	.	.	.	.
_est_car6	.	.	.	.	.	.	.
_est_car7	.	.	.	.	.	.	.
_est_car8	.	.	.	.	.	.	.
_est_car9	.	.	.	.	.	.	.
_est_car10	.	.	.	.	.	.	.
_est_car11	.	.	.	.	.	.	.
_est_car12	.	.	.	.	.	.	.
_est_car13	.	.	.	.	.	.	.
_est_car14	.	.	.	.	.	.	.
_est_car15	.	.	.	.	.	.	.
_est_car16	.	.	.	.	.	.	.
_est_car17	.	.	.	.	.	.	.
_est_car18	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.

	r12	r13	r14	r15	r16	r17	r18
r12	**1.0000**						
r13	**0.9776**	**1.0000**					
r14	**0.9781**	**0.9996**	**1.0000**				
r15	**0.7975**	**0.8272**	**0.8242**	**1.0000**			
r16	**0.9307**	**0.9554**	**0.9559**	**0.8108**	**1.0000**		
r17	**0.7413**	**0.7758**	**0.7746**	**0.6171**	**0.7765**	**1.0000**	
r18	**0.9231**	**0.9329**	**0.9334**	**0.7576**	**0.9132**	**0.7399**	**1.0000**
r19	**0.8825**	**0.9236**	**0.9218**	**0.7840**	**0.9451**	**0.7782**	**0.8901**
r20	**0.8840**	**0.9249**	**0.9233**	**0.7871**	**0.9474**	**0.7753**	**0.8912**
rmrf	**0.9445**	**0.9407**	**0.9409**	**0.7949**	**0.9133**	**0.7454**	**0.9171**
smb	**0.2605**	**0.3371**	**0.3400**	**0.3124**	**0.4421**	**0.3608**	**0.4400**
hml	**-0.2038**	**-0.2820**	**-0.2829**	**-0.2413**	**-0.3800**	**-0.2933**	**-0.3765**
wml	**-0.0049**	**0.0021**	**0.0002**	**0.0107**	**-0.0603**	**-0.0498**	**-0.0090**
_est_capm1	.	.	.	.	.	.	.
_est_capm2	.	.	.	.	.	.	.
_est_capm3	.	.	.	.	.	.	.
_est_capm4	.	.	.	.	.	.	.
_est_capm5	.	.	.	.	.	.	.
_est_capm6	.	.	.	.	.	.	.
_est_capm7	.	.	.	.	.	.	.
_est_capm8	.	.	.	.	.	.	.
_est_capm9	.	.	.	.	.	.	.
_est_capm10	.	.	.	.	.	.	.
_est_capm11	.	.	.	.	.	.	.
_est_capm12	.	.	.	.	.	.	.
_est_capm13	.	.	.	.	.	.	.
_est_capm14	.	.	.	.	.	.	.
_est_capm15	.	.	.	.	.	.	.
_est_capm16	.	.	.	.	.	.	.
_est_capm17	.	.	.	.	.	.	.
_est_capm18	.	.	.	.	.	.	.
_est_capm19	.	.	.	.	.	.	.
_est_capm20	.	.	.	.	.	.	.
_est_ff1	.	.	.	.	.	.	.
_est_ff2	.	.	.	.	.	.	.
_est_ff3	.	.	.	.	.	.	.
_est_ff4	.	.	.	.	.	.	.
_est_ff5	.	.	.	.	.	.	.
_est_ff6	.	.	.	.	.	.	.
_est_ff7	.	.	.	.	.	.	.
_est_ff8	.	.	.	.	.	.	.
_est_ff9	.	.	.	.	.	.	.
_est_ff10	.	.	.	.	.	.	.
_est_ff11	.	.	.	.	.	.	.
_est_ff12	.	.	.	.	.	.	.
_est_ff13	.	.	.	.	.	.	.
_est_ff14	.	.	.	.	.	.	.
_est_ff15	.	.	.	.	.	.	.
_est_ff16	.	.	.	.	.	.	.
_est_ff17	.	.	.	.	.	.	.
_est_ff18	.	.	.	.	.	.	.
_est_ff19	.	.	.	.	.	.	.
_est_ff20	.	.	.	.	.	.	.
_est_car2	.	.	.	.	.	.	.
_est_car3	.	.	.	.	.	.	.
_est_car4	.	.	.	.	.	.	.
_est_car5	.	.	.	.	.	.	.
_est_car6	.	.	.	.	.	.	.
_est_car7	.	.	.	.	.	.	.
_est_car8	.	.	.	.	.	.	.
_est_car9	.	.	.	.	.	.	.
_est_car10	.	.	.	.	.	.	.
_est_car11	.	.	.	.	.	.	.

_est_car12	.	.	.	.	.	.	.
_est_car13	.	.	.	.	.	.	.
_est_car14	.	.	.	.	.	.	.
_est_car15	.	.	.	.	.	.	.
_est_car16	.	.	.	.	.	.	.
_est_car17	.	.	.	.	.	.	.
_est_car18	.	.	.	.	.	.	.
_est_car19	.	.	.	.	.	.	.
_est_car20	.	.	.	.	.	.	.
_est_car1	.	.	.	.	.	.	.

	r19	r20	rmrf	smb	hml	wml	_est_~m1
r19	**1.0000**						
r20	**0.9992**	**1.0000**					
rmrf	**0.8883**	**0.8899**	**1.0000**				
smb	**0.4699**	**0.4724**	**0.3499**	**1.0000**			
hml	**-0.4135**	**-0.4162**	**-0.2829**	**-0.9514**	**1.0000**		
wml	**-0.0592**	**-0.0565**	**-0.0237**	**-0.0314**	**0.0305**	**1.0000**	
_est_capm1	.	.	.	.	.	.	**1.0000**
_est_capm2	.	.	.	.	.	.	**1.0000**
_est_capm3	.	.	.	.	.	.	**1.0000**
_est_capm4	.	.	.	.	.	.	**1.0000**
_est_capm5	.	.	.	.	.	.	**1.0000**
_est_capm6	.	.	.	.	.	.	**1.0000**
_est_capm7	.	.	.	.	.	.	**1.0000**
_est_capm8	.	.	.	.	.	.	**1.0000**
_est_capm9	.	.	.	.	.	.	**1.0000**
_est_capm10	.	.	.	.	.	.	**1.0000**
_est_capm11	.	.	.	.	.	.	**1.0000**
_est_capm12	.	.	.	.	.	.	**1.0000**
_est_capm13	.	.	.	.	.	.	**1.0000**
_est_capm14	.	.	.	.	.	.	**1.0000**
_est_capm15	.	.	.	.	.	.	**1.0000**
_est_capm16	.	.	.	.	.	.	**1.0000**
_est_capm17	.	.	.	.	.	.	**1.0000**
_est_capm18	.	.	.	.	.	.	**1.0000**
_est_capm19	.	.	.	.	.	.	**1.0000**
_est_capm20	.	.	.	.	.	.	**1.0000**
_est_ff1	.	.	.	.	.	.	**1.0000**
_est_ff2	.	.	.	.	.	.	**1.0000**
_est_ff3	.	.	.	.	.	.	**1.0000**
_est_ff4	.	.	.	.	.	.	**1.0000**
_est_ff5	.	.	.	.	.	.	**1.0000**
_est_ff6	.	.	.	.	.	.	**1.0000**
_est_ff7	.	.	.	.	.	.	**1.0000**
_est_ff8	.	.	.	.	.	.	**1.0000**
_est_ff9	.	.	.	.	.	.	**1.0000**
_est_ff10	.	.	.	.	.	.	**1.0000**
_est_ff11	.	.	.	.	.	.	**1.0000**
_est_ff12	.	.	.	.	.	.	**1.0000**
_est_ff13	.	.	.	.	.	.	**1.0000**
_est_ff14	.	.	.	.	.	.	**1.0000**
_est_ff15	.	.	.	.	.	.	**1.0000**
_est_ff16	.	.	.	.	.	.	**1.0000**
_est_ff17	.	.	.	.	.	.	**1.0000**
_est_ff18	.	.	.	.	.	.	**1.0000**
_est_ff19	.	.	.	.	.	.	**1.0000**
_est_ff20	.	.	.	.	.	.	**1.0000**
_est_car2	.	.	.	.	.	.	**1.0000**
_est_car3	.	.	.	.	.	.	**1.0000**
_est_car4	.	.	.	.	.	.	**1.0000**
_est_car5	.	.	.	.	.	.	**1.0000**
_est_car6	.	.	.	.	.	.	**1.0000**
_est_car7	.	.	.	.	.	.	**1.0000**

_est_car8	.	.	.	.	.	.	1.0000
_est_car9	.	.	.	.	.	.	1.0000
_est_car10	.	.	.	.	.	.	1.0000
_est_car11	.	.	.	.	.	.	1.0000
_est_car12	.	.	.	.	.	.	1.0000
_est_car13	.	.	.	.	.	.	1.0000
_est_car14	.	.	.	.	.	.	1.0000
_est_car15	.	.	.	.	.	.	1.0000
_est_car16	.	.	.	.	.	.	1.0000
_est_car17	.	.	.	.	.	.	1.0000
_est_car18	.	.	.	.	.	.	1.0000
_est_car19	.	.	.	.	.	.	1.0000
_est_car20	.	.	.	.	.	.	1.0000
_est_car1	.	.	.	.	.	.	1.0000

	est~m2	_est_~m3	_est_~m4	_est_~m5	_est_~m6	_est_~m7	_est_~m8
_est_capm2	1.0000						
_est_capm3	1.0000	1.0000					
_est_capm4	1.0000	1.0000	1.0000				
_est_capm5	1.0000	1.0000	1.0000	1.0000			
_est_capm6	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_capm7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_capm8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	est~m9	_est~m10	_est~m11	_est~m12	_est~m13	_est~m14	_est~m15
_est_capm9	1.0000						
_est_capm10	1.0000	1.0000					
_est_capm11	1.0000	1.0000	1.0000				
_est_capm12	1.0000	1.0000	1.0000	1.0000			
_est_capm13	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_capm14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_capm15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_capm20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est~m16	_est~m17	_est~m18	_est~m19	_est~m20	_est_ff1	_est_ff2
_est_capm16	1.0000						
_est_capm17	1.0000	1.0000					
_est_capm18	1.0000	1.0000	1.0000				
_est_capm19	1.0000	1.0000	1.0000	1.0000			
_est_capm20	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_ff1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_ff2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est_ff3	_est_ff4	_est_ff5	_est_ff6	_est_ff7	_est_ff8	_est_ff9
_est_ff3	1.0000						
_est_ff4	1.0000	1.0000					
_est_ff5	1.0000	1.0000	1.0000				
_est_ff6	1.0000	1.0000	1.0000	1.0000			
_est_ff7	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_ff8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_ff9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

_est_ff16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est~f10	_est~f11	_est~f12	_est~f13	_est~f14	_est~f15	_est~f16
_est_ff10	1.0000						
_est_ff11	1.0000	1.0000					
_est_ff12	1.0000	1.0000	1.0000				
_est_ff13	1.0000	1.0000	1.0000	1.0000			
_est_ff14	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_ff15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_ff16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_ff20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est~f17	_est~f18	_est~f19	_est~f20	_est_~r2	_est_~r3	_est_~r4
_est_ff17	1.0000						
_est_ff18	1.0000	1.0000					
_est_ff19	1.0000	1.0000	1.0000				
_est_ff20	1.0000	1.0000	1.0000	1.0000			
_est_car2	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_car3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_car4	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car6	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car7	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car8	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	est~r5	_est_~r6	_est_~r7	_est_~r8	_est_~r9	_est~r10	_est~r11
_est_car5	1.0000						
_est_car6	1.0000	1.0000					
_est_car7	1.0000	1.0000	1.0000				
_est_car8	1.0000	1.0000	1.0000	1.0000			
_est_car9	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_car10	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_car11	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car12	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car13	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car14	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car15	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est~r12	_est~r13	_est~r14	_est~r15	_est~r16	_est~r17	_est~r18
_est_car12	1.0000						
_est_car13	1.0000	1.0000					
_est_car14	1.0000	1.0000	1.0000				
_est_car15	1.0000	1.0000	1.0000	1.0000			
_est_car16	1.0000	1.0000	1.0000	1.0000	1.0000		
_est_car17	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	
_est_car18	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car19	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car20	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
_est_car1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

	_est~r19	_est~r20	_est_~r1
_est_car19	1.0000		
_est_car20	1.0000	1.0000	
_est_car1	1.0000	1.0000	1.0000

41 . pwcorr r1 rmrf smb hml wml

	r1	rmrf	smb	hml	wml
r1	1.0000				
rmrf	0.9000	1.0000			
smb	0.3065	0.3499	1.0000		
hml	-0.2709	-0.2829	-0.9514	1.0000	
wml	-0.0779	-0.0237	-0.0314	0.0305	1.0000

42 . vif

Variable	VIF	1/VIF
smb	11.39	0.087771
hml	10.87	0.092012
rmrf	1.18	0.851025
wml	1.00	0.998808
Mean VIF	6.11	

43 . reg r1 rmrf smb hml wml

Source	SS	df	MS	Number of obs	=	120
				F(4, 115)	=	130.81
Model	1763.719	4	440.92975	Prob > F	=	0.0000
Residual	387.652185	115	3.37088857	R-squared	=	0.8198
				Adj R-squared	=	0.8135
Total	2151.37118	119	18.0787494	Root MSE	=	1.836

r1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rmrf	88.37442	4.132204	21.39	0.000	80.18932	96.55952
smb	-30.55523	15.20777	-2.01	0.047	-60.6789	-.4315607
hml	-29.55418	14.55813	-2.03	0.045	-58.39103	-.7173227
wml	-16.89643	11.8509	-1.43	0.157	-40.37078	6.57791
_cons	.7176653	.7344903	0.98	0.331	-.7372186	2.172549

44 . reg r1 rmrf smb hml

Source	SS	df	MS	Number of obs	=	120
				F(3, 116)	=	172.20
Model	1756.86676	3	585.622255	Prob > F	=	0.0000
Residual	394.504419	116	3.40090016	R-squared	=	0.8166
				Adj R-squared	=	0.8119
Total	2151.37118	119	18.0787494	Root MSE	=	1.8442

r1	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
rmrf	88.45839	4.150136	21.31	0.000	80.23852	96.67826
smb	-30.48331	15.27524	-2.00	0.048	-60.73783	-.2287763
hml	-29.65203	14.62263	-2.03	0.045	-58.61399	-.6900658
_cons	-.300368	.1729078	-1.74	0.085	-.6428337	.0420977

```
45 . vif
```

Variable	VIF	1/VIF
smb	**11.39**	**0.087772**
hml	**10.87**	**0.092014**
rmrf	**1.17**	**0.851198**
Mean VIF	**7.81**	

```
46 . log close
      name:  <unnamed>
       log:  C:\Users\a\Desktop\426=A1.smcl
  log type:  smcl
 closed on:  27 Jan 2021, 20:17:21
```

```
47 .
```