```
      name:  <unnamed>
       log:  /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Sc
> ience/Project/Project_Group28.smcl
  log type:  smcl
 opened on:   7 Dec 2020, 15:45:37

 1 . do "/Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
  > roject/Data_Project_Group28.do"

 2 . ////////////////////////////// Data Science For Fincance: Project Group 28
  > ////////////////////////////
  >
 3 . use Data_ESG_Final_All, clear

 4 .
 5 . histogram esg, frequency title("Frequency of ESG")
  (bin=37, start=.88, width=2.4954054)

 6 . graph export HistESG.pdf,replace
  (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
  > roject/HistESG.pdf written in PDF format)

 7 .
 8 . histogram esgcomb, frequency title("Frequency of ESG Combined")
  (bin=37, start=.88, width=2.4605405)

 9 . graph export HistESGComb.pdf,replace
  (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
  > roject/HistESGComb.pdf written in PDF format)

10 .
11 . encode identifierric, gen(ric)

12 .
13 . xtset  ric year
        panel variable:  ric (strongly balanced)
         time variable:  year, 2015 to 2019
                 delta:  1 unit
```

```
14 .
15 . sort identifierric year

16 .
17 . by identifierric year: gen returns_rf=returns-rf
   (157 missing values generated)

18 .
19 . **gen avg_annual_returns_rf=avg_annual_return-rf
20 .
21 . pwcorr returns_rf mktrf SMB HML
```

	return~f	mktrf	SMB	HML
returns_rf	**1.0000**			
mktrf	**0.3879**	**1.0000**		
SMB	**0.2894**	**0.3733**	**1.0000**	
HML	**0.1240**	**-0.0699**	**0.8400**	**1.0000**

```
22 .
23 . winsor returns, gen(returns_w) p(0.01)

24 .
25 . sort identifierric year

26 .
27 . by identifierric year: gen returns_rf_w=returns_w-rf
   (157 missing values generated)

28 .
29 . drop returns_rf

30 .
31 . rename returns_rf_w returns_rf

32 .
33 . drop returns
```

```
34 .
35 . rename returns_w returns

36 .
37 .
38 . ////////////Descriptive Table//////////////
   >
39 . estpost summarize returns returns_rf sd_returns mktcap debtequ revenuepersha
   > re currentratio esg esgcomb e s g mktrf SMB HML rf

                    |   e(count)   e(sum_w)    e(mean)     e(Var)      e(sd)     e(min
   > )     e(max)     e(sum)
   ----------------+------------------------------------------------------------------
   > ------------------------

        returns |      5668       5668   .1068437   .1124944   .3354019       -.6
   > 6       1.27     605.59
      returns_rf |      5668       5668   .0967809   .1124488   .3353338     -.681
   > 4     1.2698   548.5539
      sd_returns |      5729       5729   .2955861   .0226192   .1503969   .096204
   > 8   .9071959   1693.413
         mktcap |      5763       5763   16751.33   2.72e+09   52175.89      21.0
   > 1    1304765   9.65e+07
        debtequ |      5578       5578   1.674618   24.96945   4.996944
   > 0     159.86    9341.02
   revenueper~e |      5800       5800   170.4521   1.76e+07   4189.728
   > 0   155828.5   988622.2
   currentratio |      4270       4270   1.987761   2.250591   1.500197        .1
   > 4      19.06    8487.74
            esg |      5559       5559   43.28832   378.5612   19.45665        .8
   > 8      93.21   240639.8
        esgcomb |      5559       5559   41.79161   331.4123   18.20473        .8
   > 8      91.92   232319.5
              e |      4219       4219   38.09027    734.504   27.10173        .0
   > 9      96.91   160702.9
              s |      5559       5559   45.27212   440.0918   20.97837        .9
   > 5      97.84   251667.7
              g |      5559       5559   52.36945   469.5975    21.6702        .5
   > 2      98.45   291121.8
          mktrf |      5825       5825      .1045   .0183048   .1352951     -.080
   > 6      .2818   608.7125
            SMB |      5825       5825    -.02798   .0023254   .0482221     -.068
   > 2      .0636  -162.9835
            HML |      5825       5825    -.05908   .0208685   .1444593     -.202
   > 4       .219   -344.141
             rf |      5825       5825     .00994   .0000719   .0084812      .000
   > 2      .0214    57.9005
```

```
40 . esttab using DescriptiveTable.rtf, cells("count mean sd min max") noobs appe
   > nd
   (output written to DescriptiveTable.rtf)

41 .
42 . estpost tab icbindustryname
```

icbindustryn	e(b)	e(pct)	e(cumpct)
Basic_Mate~s	**355**	**6.12069**	**6.12069**
Consumer_D~y	**995**	**17.15517**	**23.27586**
Consumer_S~s	**260**	**4.482759**	**27.75862**
Energy	**385**	**6.637931**	**34.39655**
Financials	**830**	**14.31034**	**48.7069**
Health_Care	**390**	**6.724138**	**55.43103**
Industrials	**1220**	**21.03448**	**76.46552**
Real_Estate	**700**	**12.06897**	**88.53448**
Technology	**325**	**5.603448**	**94.13793**
Telecommun~s	**75**	**1.293103**	**95.43103**
Utilities	**265**	**4.568966**	**100**
Total	**5800**	**100**	

```
43 . esttab using DescriptiveTable.rtf,cells("b(label(frequence)) pct(fmt(2)) cum
   > pct(fmt(2))") varlabels(, blist(Total "{hline @width}{break}")) nonumber nom
   > title noobs append
   (output written to DescriptiveTable.rtf)

44 .
45 . ////////////Regressions for entire US market (1-2) A //////////////
   >
46 . //Fama-French 3 Factor
47 .
48 . ** ESG
49 .
50 . gen dummy_ESGA=0
```

```
51 . replace dummy_ESGA=1 if esg>=75
   (668 real changes made)

52 . replace dummy_ESGA=0 if esg==.
   (266 real changes made)

53 .
54 . gen dummy_ESGB=0

55 . replace dummy_ESGB=1 if esg<75  & esg>50
   (1,520 real changes made)

56 . replace dummy_ESGB=0 if esg==.
   (0 real changes made)

57 .
58 . gen dummy_ESGC=0

59 . replace dummy_ESGC=1 if esg<=50 & esg>25
   (2,549 real changes made)

60 . replace dummy_ESGC=0 if esg==.
   (0 real changes made)

61 .
62 . gen dummy_ESGD=0

63 . replace dummy_ESGD=1 if esg<=25
   (1,088 real changes made)

64 . replace dummy_ESGD=0 if esg==.
   (0 real changes made)

65 .
66 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC, vce(robus
   > t)

   Linear regression                               Number of obs     =      5,668
                                                   F(6, 5661)        =     246.99
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.1998
                                                   Root MSE          =     .30012
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9428281	.0514528	18.32	0.000	.8419608	1.043695
SMB	.8228869	.2627428	3.13	0.002	.3078104	1.337963
HML	.1069603	.0812978	1.32	0.188	-.0524146	.2663351
dummy_ESGA	-.0164064	.0159656	-1.03	0.304	-.0477052	.0148923
dummy_ESGB	-.0250601	.0117108	-2.14	0.032	-.0480177	-.0021025
dummy_ESGC	-.0207644	.0114257	-1.82	0.069	-.0431631	.0016343
_cons	.0435421	.0123313	3.53	0.000	.0193681	.0677161

```
67 . estimates store r1_1

68 .
69 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD, vce(robus
   > t)

Linear regression                               Number of obs     =      5,668
                                                F(6, 5661)        =     247.05
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2000
                                                Root MSE          =    .30008
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.944708	.0515356	18.33	0.000	.8436785	1.045738
SMB	.7797109	.2639842	2.95	0.003	.2622007	1.297221
HML	.1172378	.0815033	1.44	0.150	-.0425398	.2770154
dummy_ESGB	-.0062238	.012565	-0.50	0.620	-.0308559	.0184084
dummy_ESGC	-.0018617	.0123461	-0.15	0.880	-.0260648	.0223413
dummy_ESGD	.0236594	.0151944	1.56	0.119	-.0061274	.0534463
_cons	.0239141	.0137834	1.73	0.083	-.0031067	.0509349

```
70 . estimates store r2_1

71 .
72 . ** ESG combined
73 .
74 . gen dummy_ESGAA=0

75 . replace dummy_ESGAA=1 if esgcomb>=75
   (538 real changes made)

76 . replace dummy_ESGAA=0 if esg==.
   (266 real changes made)

77 .
78 . gen dummy_ESGBB=0

79 . replace dummy_ESGBB=1 if esgcomb<75 & esgcomb>50
   (1,450 real changes made)

80 . replace dummy_ESGBB=0 if esg==.
   (0 real changes made)

81 .
82 . gen dummy_ESGCC=0

83 . replace dummy_ESGCC=1 if esgcomb<=50  & esgcomb>25
   (2,732 real changes made)

84 . replace dummy_ESGCC=0 if esg==.
   (0 real changes made)

85 .
86 . gen dummy_ESGDD=0

87 . replace dummy_ESGDD=1 if esgcomb<=25
   (1,105 real changes made)
```

```
88 . replace dummy_ESGDD=0 if esg==.
   (0 real changes made)

89 .
90 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC, vce(ro
   > bust)

   Linear regression                               Number of obs     =      5,668
                                                   F(6, 5661)        =     247.48
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.2001
                                                   Root MSE          =     .30007

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    .942457   .0513858    18.34   0.000     .8417211    1.043193
         SMB |   .8227203   .2624736     3.13   0.002     .3081715    1.337269
         HML |   .1073187   .0812492     1.32   0.187    -.0519608    .2665983
dummy_ESGAA  |  -.0002921    .018189    -0.02   0.987    -.0359496    .0353654
dummy_ESGBB  |  -.0290883   .0117991    -2.47   0.014    -.0522189   -.0059576
dummy_ESGCC  |  -.0190476   .0112376    -1.69   0.090    -.0410776    .0029825
       _cons |   .0430303   .0123019     3.50   0.000     .0189139    .0671467
------------------------------------------------------------------------------

91 . estimates store r1_2

92 .
93 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD, vce(ro
   > bust)

   Linear regression                               Number of obs     =      5,668
                                                   F(6, 5661)        =     247.42
                                                   Prob > F          =     0.0000
                                                   R-squared         =     0.2002
                                                   Root MSE          =     .30005
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9441174	.0514633	18.35	0.000	.8432297	1.045005
SMB	.7959958	.2640533	3.01	0.003	.2783501	1.313641
HML	.1132898	.0815003	1.39	0.165	-.046482	.2730615
dummy_ESGBB	-.0187301	.0139243	-1.35	0.179	-.046027	.0085667
dummy_ESGCC	-.0086647	.0134834	-0.64	0.520	-.0350973	.017768
dummy_ESGDD	.0149696	.0162142	0.92	0.356	-.0168164	.0467556
_cons	.0321109	.0150504	2.13	0.033	.0026064	.0616154

```
 94 . estimates store r2_2

 95 .
 96 . ** E
 97 .
 98 . gen dummy_EA=0

 99 . replace dummy_EA=1 if e>=75
    (2,164 real changes made)

100 . replace dummy_EA=0 if esg==.
    (266 real changes made)

101 .
102 . gen dummy_EB=0

103 . replace dummy_EB=1 if e<75 & e>50
    (894 real changes made)

104 . replace dummy_EB=0 if esg==.
    (0 real changes made)

105 .
106 . gen dummy_EC=0
```

```
107 . replace dummy_EC=1 if e<=50  & e>25
    (1,084 real changes made)

108 . replace dummy_EC=0 if esg==.
    (0 real changes made)

109 .
110 . gen dummy_ED=0

111 . replace dummy_ED=1 if e<=25
    (1,683 real changes made)

112 . replace dummy_ED=0 if esg==.
    (0 real changes made)

113 .
114 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC, vce(robust)

    Linear regression                               Number of obs     =      5,668
                                                    F(6, 5661)        =     251.32
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2001
                                                    Root MSE          =     .30007

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9457217    .051367    18.41   0.000     .8450226    1.046421
         SMB |   .7703773   .2630682     2.93   0.003     .2546628    1.286092
         HML |   .1197727   .0812996     1.47   0.141    -.0396058    .2791511
    dummy_EA |   .0149496   .0102417     1.46   0.144    -.0051281    .0350273
    dummy_EB |  -.0102972   .0110465    -0.93   0.351    -.0319526    .0113582
    dummy_EC |  -.0131797   .0118381    -1.11   0.266    -.0363869    .0100274
       _cons |   .0248114   .0107902     2.30   0.022     .0036584    .0459644
------------------------------------------------------------------------------
```

```
115 . estimates store r1_3

116 .
117 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED, vce(robust)

Linear regression                               Number of obs     =      5,668
                                                F(6, 5661)        =     251.51
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2000
                                                Root MSE          =     .30009
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9447721	.0513426	18.40	0.000	.844121	1.045423
SMB	.7985057	.2628573	3.04	0.002	.2832047	1.313807
HML	.1130046	.0813945	1.39	0.165	-.0465599	.272569
dummy_EB	-.023015	.0105785	-2.18	0.030	-.0437528	-.0022771
dummy_EC	-.0259249	.0114016	-2.27	0.023	-.0482764	-.0035733
dummy_ED	-.01202	.0103291	-1.16	0.245	-.032269	.008229
_cons	.0380313	.0102218	3.72	0.000	.0179928	.0580699

```
118 . estimates store r2_3

119 .
120 . ** S
121 .
122 . tabstat s, stat(mean p25 p50 p75)
```

variable	mean	p25	p50	p75
s	45.27212	28.69	41.97	60.49

```
123 .
```

```
124 . gen dummy_SA=0

125 . replace dummy_SA=1 if s>=75
    (905 real changes made)

126 . replace dummy_SA=0 if esg==.
    (266 real changes made)

127 .
128 . gen dummy_SB=0

129 . replace dummy_SB=1 if s<75 & s>50
    (1,431 real changes made)

130 . replace dummy_SB=0 if esg==.
    (0 real changes made)

131 .
132 . gen dummy_SC=0

133 . replace dummy_SC=1 if s<=50 & s>25
    (2,506 real changes made)

134 . replace dummy_SC=0 if esg==.
    (0 real changes made)

135 .
136 . gen dummy_SD=0

137 . replace dummy_SD=1 if s<=25
    (983 real changes made)

138 . replace dummy_SD=0 if esg==.
    (0 real changes made)

139 .
140 .
```

```
141 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC, vce(robust)

Linear regression                               Number of obs     =      5,668
                                                F(6, 5661)        =     248.81
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1999
                                                Root MSE          =     .3001

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9374892   .0514881    18.21   0.000     .8365529    1.038425
         SMB |   .8473618   .2627321     3.23   0.001     .3323062    1.362417
         HML |   .1024911   .0812529     1.26   0.207    -.0567958    .2617779
    dummy_SA |  -.0091081   .0140693    -0.65   0.517    -.0366894    .0184731
    dummy_SB |  -.0190467   .0124832    -1.53   0.127    -.0435186    .0054251
    dummy_SC |  -.0256977    .012045    -2.13   0.033    -.0493105   -.0020849
       _cons |   .0444754   .0129912     3.42   0.001     .0190077    .0699431
------------------------------------------------------------------------------

142 . estimates store r1_4

143 .
144 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD, vce(robust)

Linear regression                               Number of obs     =      5,668
                                                F(6, 5661)        =     248.78
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2001
                                                Root MSE          =     .30007

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9394491    .051576    18.21   0.000     .8383404    1.040558
         SMB |   .8154936   .2635127     3.09   0.002     .2989077     1.33208
         HML |   .1101086   .0814528     1.35   0.176    -.0495701    .2697873
    dummy_SB |  -.0063513   .0111021    -0.57   0.567    -.0281156    .0154131
    dummy_SC |    -.01297   .0106361    -1.22   0.223    -.0338207    .0078808
    dummy_SD |   .0179114   .0145983     1.23   0.220    -.0107068    .0465296
       _cons |   .0311512   .0121788     2.56   0.011      .007276    .0550263
------------------------------------------------------------------------------
```

```
145 . estimates store r2_4

146 .
147 . ** G
148 .
149 . tabstat g, stat(mean p25 p50 p75)
```

variable	mean	p25	p50	p75
g	**52.36945**	**35.91**	**54.42**	**69.4**

```
150 .
151 . gen dummy_GA=0

152 . replace dummy_GA=1 if g>=75
    (1,176 real changes made)

153 . replace dummy_GA=0 if esg==.
    (266 real changes made)

154 .
155 . gen dummy_GB=0

156 . replace dummy_GB=1 if g<75 & g>50
    (2,215 real changes made)

157 . replace dummy_GB=0 if esg==.
    (0 real changes made)

158 .
159 . gen dummy_GC=0

160 . replace dummy_GC=1 if g<=50 & g>25
    (1,672 real changes made)

161 . replace dummy_GC=0 if esg==.
    (0 real changes made)
```

```
162 .
163 . gen dummy_GD=0

164 . replace dummy_GD=1 if g<=25
    (762 real changes made)

165 . replace dummy_GD=0 if esg==.
    (0 real changes made)

166 .
167 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC, vce(robust)

    Linear regression                               Number of obs     =      5,668
                                                    F(6, 5661)        =     249.54
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2003
                                                    Root MSE          =     .30004

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |     .94066   .0513258    18.33   0.000     .8400417    1.041278
         SMB |     .82301   .2629462     3.13   0.002     .3075347    1.338485
         HML |   .1061079   .0814143     1.30   0.193    -.0534954    .2657112
    dummy_GA |  -.0365179   .0143065    -2.55   0.011    -.0645641   -.0084717
    dummy_GB |  -.0089622   .0124101    -0.72   0.470    -.0332909    .0153664
    dummy_GC |  -.0043187   .0133849    -0.32   0.747    -.0305582    .0219208
       _cons |    .037281   .0134325     2.78   0.006      .010948    .0636139
------------------------------------------------------------------------------

168 . estimates store r1_5

169 .
170 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD, vce(robust)

    Linear regression                               Number of obs     =      5,668
                                                    F(6, 5661)        =     248.79
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2003
                                                    Root MSE          =     .30004
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9413852	.0513931	18.32	0.000	.840635	1.042135
SMB	.7588835	.2637923	2.88	0.004	.2417495	1.276018
HML	.1218704	.0815131	1.50	0.135	-.0379265	.2816673
dummy_GB	.0237406	.0103406	2.30	0.022	.003469	.0440121
dummy_GC	.0283268	.0115143	2.46	0.014	.0057544	.0508992
dummy_GD	.0375633	.0153799	2.44	0.015	.0074127	.0677139
_cons	.0037589	.0119861	0.31	0.754	-.0197385	.0272563

```
171 . estimates store r2_5

172 .
173 . ** Final
174 .
175 . esttab r1_1 r1_2 r1_3 r1_4 r1_5 using FF_Estimations.rtf, r2 se star(* 0.10
    > ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

176 . esttab r1_1 r1_2 r1_3 r1_4 r1_5 , r2 se star(* 0.10 ** 0.05 *** 0.01)

    > ──────────────
                          (1)             (2)             (3)             (4)
    >         (5)
                   returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ──────────────────────────────────────────────────────────────────────────
    > ──────────────
    mktrf               0.943***        0.942***        0.946***        0.937***
    >       0.941***
                       (0.0515)        (0.0514)        (0.0514)        (0.0515)
    >    (0.0513)

    SMB                 0.823***        0.823***        0.770***        0.847***
    >       0.823***
                        (0.263)         (0.262)         (0.263)         (0.263)
    >     (0.263)

    HML                 0.107           0.107           0.120           0.102
    >       0.106
                       (0.0813)        (0.0812)        (0.0813)        (0.0813)
    >    (0.0814)
```

dummy_ESGA	-0.0164		
	(0.0160)		
dummy_ESGB	-0.0251**		
	(0.0117)		
dummy_ESGC	-0.0208*		
	(0.0114)		
dummy_ESGAA		-0.000292	
		(0.0182)	
dummy_ESGBB		-0.0291**	
		(0.0118)	
dummy_ESGCC		-0.0190*	
		(0.0112)	
dummy_EA			0.0149
			(0.0102)
dummy_EB			-0.0103
			(0.0110)
dummy_EC			-0.0132
			(0.0118)

dummy_SA				-0.00911
				(0.0141)
dummy_SB				-0.0190
				(0.0125)
dummy_SC				-0.0257**
				(0.0120)
dummy_GA	-0.0365**			
	(0.0143)			
dummy_GB	-0.00896			
	(0.0124)			
dummy_GC	-0.00432			
	(0.0134)			
_cons	0.0435***	0.0430***	0.0248**	0.0445***
	0.0373***			
	(0.0123)	(0.0123)	(0.0108)	(0.0130)
	(0.0134)			
N	5668	5668	5668	5668
	5668			
R-sq	0.200	0.200	0.200	0.200
	0.200			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
177 . esttab r2_1 r2_2 r2_3 r2_4 r2_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

──────────────────────────────────────────────────────────────────────────────
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
──────────────────────────────────────────────────────────────────────────────
> ──────────────
mktrf               0.945***        0.944***        0.945***        0.939***
>       0.941***
                   (0.0515)        (0.0515)        (0.0513)        (0.0516)
>    (0.0514)

SMB                 0.780***        0.796***        0.799***        0.815***
>       0.759***
                    (0.264)         (0.264)         (0.263)         (0.264)
>     (0.264)

HML                   0.117           0.113           0.113           0.110
>       0.122
                   (0.0815)        (0.0815)        (0.0814)        (0.0815)
>    (0.0815)

dummy_ESGB         -0.00622
>
                   (0.0126)
>

dummy_ESGC         -0.00186
>
                   (0.0123)
>

dummy_ESGD           0.0237
>
                   (0.0152)
>

dummy_ESGBB                         -0.0187
>
                                   (0.0139)
>
```

dummy_ESGCC	-0.00866			
	(0.0135)			
dummy_ESGDD	0.0150			
	(0.0162)			
dummy_EB		-0.0230**		
		(0.0106)		
dummy_EC		-0.0259**		
		(0.0114)		
dummy_ED		-0.0120		
		(0.0103)		
dummy_SB			-0.00635	
			(0.0111)	
dummy_SC			-0.0130	
			(0.0106)	
dummy_SD			0.0179	
			(0.0146)	
dummy_GB	0.0237**			
	(0.0103)			

```
    dummy_GC
    >      0.0283**

    >    (0.0115)

    dummy_GD
    >      0.0376**

    >    (0.0154)

    _cons              0.0239*         0.0321**        0.0380***       0.0312**
    >     0.00376
                      (0.0138)        (0.0151)        (0.0102)        (0.0122)
    >    (0.0120)
    ------------------------------------------------------------------------------
    > --------------
    N                     5668            5668            5668            5668
    >        5668
    R-sq                 0.200           0.200           0.200           0.200
    >       0.200
    ------------------------------------------------------------------------------
    > --------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

178 .
179 . ////Sharpe Ratio & Treynor Ratio
    >
180 . sort identifierric year

181 .
182 . by identifierric year: gen SharpeRatio = returns_rf/sd_returns
    (171 missing values generated)

183 .
184 . winsor SharpeRatio, gen(SharpeRatio_w) p(0.01)
```

```
185 .
186 . drop SharpeRatio

187 .
188 . rename SharpeRatio_w SharpeRatio

189 .
190 . **Sharpe Ratio
191 .
192 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio,vce(robust)

Linear regression                               Number of obs     =      3,911
                                                F(7, 3903)        =      12.65
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0234
                                                Root MSE          =     1.1672

------------------------------------------------------------------------------
> ---
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ---
  dummy_ESGA |   .0913481   .0846533     1.08   0.281    -.0746207    .2573
> 169
  dummy_ESGB |   .1641112   .0538455     3.05   0.002     .0585431    .2696
> 793
  dummy_ESGC |   .1257079   .0484716     2.59   0.010     .0306757      .22
> 074
      mktcap |   2.65e-06   3.78e-07     7.03   0.000     1.91e-06    3.39e
> -06
     debtequ |  -.0056641   .0033411    -1.70   0.090    -.0122145    .0008
> 863
revenuepe~re |  -.0007541   .0002111    -3.57   0.000     -.001168   -.0003
> 401
currentra~o |  -.0042906   .0121794    -0.35   0.725    -.0281693    .0195
> 881
       _cons |    .318719   .0512714     6.22   0.000     .2181977    .4192
> 404
------------------------------------------------------------------------------
> ---
```

```
193 . estimates store ra_1

194 .
195 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC  mktcap debtequ reve
    > nuepershare currentratio, vce(robust)

Linear regression                               Number of obs     =      3,911
                                                F(7, 3903)        =      13.09
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0235
                                                Root MSE          =     1.1672

------------------------------------------------------------------------------
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
 dummy_ESGAA |   .1909989   .0968428     1.97   0.049     .0011316    .380863
 dummy_ESGBB |   .1629354   .0538867     3.02   0.003     .0572868    .268584
 dummy_ESGCC |   .1115629   .0477064     2.34   0.019     .0180311    .205094
      mktcap |   2.61e-06   3.54e-07     7.38   0.000     1.92e-06    3.30e-06
     debtequ |  -.0055994   .0033369    -1.68   0.093    -.0121417    .000942
revenuepershare |  -.0007602   .0002118    -3.59   0.000    -.0011754   -.000344
 currentratio |  -.0030265   .0121604    -0.25   0.803    -.0268678    .020814
       _cons |    .318509   .0510866     6.23   0.000       .21835    .418668
------------------------------------------------------------------------------
```

```
196 . estimates store ra_2

197 .
198 . ** STD regression
199 .
200 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio, vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =      3,962
    Group variable: ric                             Number of groups  =        832

    R-sq:                                           Obs per group:
         within  = 0.1534                                         min =          1
         between = 0.1759                                         avg =        4.8
         overall = 0.1587                                         max =          5

                                                    Wald chi2(11)     =     742.66
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                       (Std. Err. adjusted for 832 clusters in r
    > ic)
    ------------------------------------------------------------------------------
    > ---
                 |               Robust
      sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ---
      _Iyear_2016 |   .0498087   .0049923     9.98   0.000     .0400238    .0595
    > 935
      _Iyear_2017 |  -.0285489     .00481    -5.94   0.000    -.0379764   -.0191
    > 214
      _Iyear_2018 |    .018819   .0049437     3.81   0.000     .0091295    .0285
    > 086
      _Iyear_2019 |   .0888238   .0056106    15.83   0.000     .0778272    .0998
    > 205
       dummy_ESGA |   -.070277   .0115001    -6.11   0.000    -.0928168   -.0477
    > 372
       dummy_ESGB |  -.0501332   .0081901    -6.12   0.000    -.0661855   -.0340
    > 808
       dummy_ESGC |   -.022893   .0066029    -3.47   0.001    -.0358345   -.0099
    > 515
           mktcap |  -3.93e-07   1.33e-07    -2.94   0.003    -6.54e-07   -1.31e
    > -07
          debtequ |   .0009758   .0005622     1.74   0.083    -.0001262    .0020
    > 777
revenuepershare |   .0000681   .0000615     1.11   0.268    -.0000525    .0001
    > 886
```

```
   currentratio |   .0064145   .0024548     2.61   0.009     .0016032    .0112
> 258
         _cons |   .3073997   .0092634    33.18   0.000     .2892437    .3255
> 556
--------------+----------------------------------------------------------------
> ----
       sigma_u |  .10041614
       sigma_e |  .09816972
           rho |  .51131065   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

201 . estimates store ra_3

202 .
203 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio, vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =      3,962
    Group variable: ric                             Number of groups  =        832

    R-sq:                                           Obs per group:
         within  = 0.1558                                         min =          1
         between = 0.1808                                         avg =        4.8
         overall = 0.1620                                         max =          5

                                                    Wald chi2(11)     =     722.34
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 832 clusters in r
    > ic)
    ------------------------------------------------------------------------------
    > ----
                 |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ----
      _Iyear_2016 |   .0504778   .0050191    10.06   0.000     .0406406     .060
    > 315
      _Iyear_2017 |  -.0277541   .0048209    -5.76   0.000    -.0372029   -.0183
    > 054
      _Iyear_2018 |   .0196648   .0049326     3.99   0.000     .0099971    .0293
    > 325
      _Iyear_2019 |   .0885948   .0056125    15.79   0.000     .0775946     .099
    > 595
      dummy_ESGAA |  -.0803973   .0109552    -7.34   0.000     -.101869   -.0589
    > 255
```

```
    dummy_ESGBB |  -.0519395   .0081022    -6.41   0.000    -.0678195   -.0360
> 595
    dummy_ESGCC |  -.0274727    .006759    -4.06   0.000    -.0407201   -.0142
> 252
         mktcap |  -4.37e-07   1.37e-07    -3.20   0.001    -7.04e-07   -1.69e
> -07
        debtequ |   .0009824   .0005636     1.74   0.081    -.0001224    .0020
> 871
revenuepershare |   .0000644    .000062     1.04   0.299    -.0000572    .0001
> 859
   currentratio |    .006496   .0024429     2.66   0.008     .0017081     .011
> 284
          _cons |   .3093267   .0093233    33.18   0.000     .2910534    .3275
> 999
------------------+------------------------------------------------------------
> ---
        sigma_u |  .09996226
        sigma_e |  .09809556
            rho |  .50942421   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ---

204 . estimates store ra_4

205 .
206 . ** Average returns-rf
207 .
208 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio, vce(robust)

Linear regression                               Number of obs     =      3,913
                                                F(7, 3905)        =       8.76
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0102
                                                Root MSE          =     .35637

------------------------------------------------------------------------------
> ---
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ---
  dummy_ESGA |  -.0117208   .0233464    -0.50   0.616     -.057493    .0340
> 514
  dummy_ESGB |   .0094692   .0171549     0.55   0.581    -.0241642    .0431
> 027
  dummy_ESGC |   .0211768   .0167968     1.26   0.207    -.0117544    .0541
> 081
```

```
          mktcap |   5.06e-07   7.62e-08     6.64   0.000     3.57e-07    6.55e
> -07
         debtequ |  -.0010624   .0013727    -0.77   0.439    -.0037537    .0016
> 288
revenuepershare |  -.0002066    .000073    -2.83   0.005    -.0003497   -.0000
> 635
    currentratio |   .0080344    .004143     1.94   0.053    -.0000882    .0161
> 571
           _cons |   .0745285   .0179129     4.16   0.000      .039409    .1096
> 481
-----------------+------------------------------------------------------------
> ----

209 . estimates store ra_5

210 .
211 . xi: reg returns_rf  dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
> uepershare currentratio, vce(robust)

Linear regression                               Number of obs     =      3,913
                                                F(7, 3905)        =       8.38
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0097
                                                Root MSE          =     .35645

-----------------+------------------------------------------------------------
> ----
                 |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-----------------+------------------------------------------------------------
> ----
    dummy_ESGAA |   .0095009   .0258368     0.37   0.713    -.041154    .0601
> 558
    dummy_ESGBB |   .0070526   .0170811     0.41   0.680    -.026436    .0405
> 413
    dummy_ESGCC |   .0165868   .0165665     1.00   0.317    -.015893    .0490
> 666
          mktcap |   4.66e-07   7.16e-08     6.52   0.000     3.26e-07    6.07e
> -07
         debtequ |  -.0010572   .0013737    -0.77   0.442    -.0037505    .0016
> 361
revenuepershare |  -.0002095   .0000728    -2.88   0.004    -.0003522   -.0000
> 668
    currentratio |   .0083072   .0041409     2.01   0.045     .0001886    .0164
> 258
           _cons |   .0755664   .0178964     4.22   0.000     .0404793    .1106
> 535
-----------------+------------------------------------------------------------
```

```
    > ———

212 . estimates store ra_6

213 .
214 . **Treynor Ratio
215 .
216 . sort identifierric year

217 .
218 . by identifierric year: gen TreynorRatio = returns_rf/beta if beta>=0
    (347 missing values generated)

219 .
220 . winsor TreynorRatio, gen(TreynorRatio_w) p(0.01)

221 .
222 . drop TreynorRatio

223 .
224 . rename TreynorRatio_w TreynorRatio

225 .
226 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
    > pershare currentratio, vce(robust)

    Linear regression                               Number of obs     =      3,791
                                                    F(7, 3783)        =       9.18
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0119
                                                    Root MSE          =     .39419

    ------------------------------------------------------------------------------
    > ———
                 |               Robust
      TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ———
        dummy_ESGA |   -.009764   .0275916    -0.35   0.723    -.0638598    .0443
    > 317
        dummy_ESGB |   .0299501   .0190044     1.58   0.115    -.0073098      .06
    > 721
        dummy_ESGC |   .0141294    .017532     0.81   0.420    -.0202436    .0485
    > 025
           mktcap |   5.34e-07   9.88e-08     5.41   0.000     3.40e-07    7.28e
    > -07
          debtequ |  -.0018374    .001221    -1.50   0.132    -.0042312    .0005
    > 565
```

```
revenuepershare |  -.0002947   .0000644    -4.58   0.000     -.000421   -.0001
> 684
   currentratio |  -.0057064   .0041924    -1.36   0.174     -.013926    .0025
> 132
          _cons |   .1322824   .0187792     7.04   0.000      .095464    .1691
> 007
--------------------------------------------------------------------------------
> ----

227 . estimates store ra_7

228 .
229 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
> nuepershare currentratio, vce(robust)

Linear regression                               Number of obs     =      3,791
                                                F(7, 3783)        =       9.02
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0115
                                                Root MSE          =     .39428

--------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+------------------------------------------------------------------
> ----
dummy_ESGAA  |   .0154674   .0313224     0.49   0.621     -.045943    .0768
> 777
dummy_ESGBB  |   .0266809   .0188233     1.42   0.156     -.010224    .0635
> 857
dummy_ESGCC  |   .0125409    .017288     0.73   0.468    -.0213538    .0464
> 355
      mktcap |   5.15e-07   9.31e-08     5.53   0.000     3.32e-07    6.97e
> -07
     debtequ |  -.0018361     .00122    -1.50   0.132    -.0042281    .0005
> 559
revenuepershare |  -.0002967   .0000647    -4.59   0.000    -.0004236   -.0001
> 699
currentratio |  -.0055016     .00419    -1.31   0.189    -.0137164    .0027
> 132
       _cons |   .1322063   .0186778     7.08   0.000     .0955868    .1688
> 258
--------------------------------------------------------------------------------
> ----
```

```
230 . estimates store ra_8

231 .
232 . **Beta
233 .
234 . xi: reg beta dummy_ESGA dummy_ESGB dummy_ESGC, vce(robust)

Linear regression                               Number of obs     =      5,594
                                                F(3, 5590)        =      13.09
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0068
                                                Root MSE          =     .55386

------------------------------------------------------------------------------
             |               Robust
        beta |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  dummy_ESGA |  -.1668047   .0303076    -5.50   0.000    -.2262193     -.10739
  dummy_ESGB |  -.1056348   .0217391    -4.86   0.000    -.1482518   -.0630178
  dummy_ESGC |  -.0613443   .0203674    -3.01   0.003    -.1012725   -.0214162
       _cons |   1.189759   .0170108    69.94   0.000     1.156411    1.223107
------------------------------------------------------------------------------

235 .
236 . xi: reg beta dummy_ESGA dummy_ESGB dummy_ESGC, vce(robust)

Linear regression                               Number of obs     =      5,594
                                                F(3, 5590)        =      13.09
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0068
                                                Root MSE          =     .55386

------------------------------------------------------------------------------
             |               Robust
        beta |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  dummy_ESGA |  -.1668047   .0303076    -5.50   0.000    -.2262193     -.10739
  dummy_ESGB |  -.1056348   .0217391    -4.86   0.000    -.1482518   -.0630178
  dummy_ESGC |  -.0613443   .0203674    -3.01   0.003    -.1012725   -.0214162
       _cons |   1.189759   .0170108    69.94   0.000     1.156411    1.223107
------------------------------------------------------------------------------
```

```
237 .
238 . esttab ra_1 ra_2 ra_7 ra_8 ra_3 ra_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

239 . esttab ra_1 ra_2 ra_7 ra_8 ra_3 ra_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                  SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
    dummy_ESGA          0.0913                         -0.00976
    >     -0.0703***
                       (0.0847)                       (0.0276)
    >    (0.0115)

    dummy_ESGB           0.164***                        0.0300
    >     -0.0501***
                       (0.0538)                       (0.0190)
    >   (0.00819)

    dummy_ESGC           0.126***                        0.0141
    >     -0.0229***
                       (0.0485)                       (0.0175)
    >   (0.00660)

    mktcap          0.00000265***   0.00000261***  0.000000534***  0.000000515*** -
    > 0.000000393*** -0.000000437***
                  (0.000000378)    (0.000000354)      (9.88e-08)      (9.31e-08)
    >  (0.000000133)    (0.000000137)

    debtequ           -0.00566*       -0.00560*       -0.00184        -0.00184
    >    0.000976*       0.000982*
                     (0.00334)       (0.00334)       (0.00122)       (0.00122)
    >  (0.000562)      (0.000564)

    revenueper~e     -0.000754***    -0.000760***    -0.000295***    -0.000297***
    >   0.0000681       0.0000644
                    (0.000211)      (0.000212)     (0.0000644)     (0.0000647)
    > (0.0000615)     (0.0000620)
```

```
currentratio     -0.00429        -0.00303        -0.00571        -0.00550
>     0.00641***      0.00650***
                  (0.0122)        (0.0122)       (0.00419)       (0.00419)
>   (0.00245)       (0.00244)

dummy_ESGAA                          0.191**                         0.0155
>                   -0.0804***
                                    (0.0968)                        (0.0313)
>                    (0.0110)

dummy_ESGBB                          0.163***                        0.0267
>                   -0.0519***
                                    (0.0539)                        (0.0188)
>                   (0.00810)

dummy_ESGCC                          0.112**                         0.0125
>                   -0.0275***
                                    (0.0477)                        (0.0173)
>                   (0.00676)

_Iyear_2016
>      0.0498***       0.0505***

>   (0.00499)       (0.00502)

_Iyear_2017
>     -0.0285***      -0.0278***

>   (0.00481)       (0.00482)

_Iyear_2018
>      0.0188***       0.0197***

>   (0.00494)       (0.00493)

_Iyear_2019
>      0.0888***       0.0886***

>   (0.00561)       (0.00561)
```

```
    _cons                0.319***        0.319***        0.132***        0.132***
    >       0.307***         0.309***
                        (0.0513)        (0.0511)        (0.0188)        (0.0187)
    >   (0.00926)        (0.00932)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                       3911            3911            3791            3791
    >        3962             3962
    R-sq                 0.023           0.023           0.012           0.011
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

240 .
241 . ** Graph
242 .
243 . twoway (qfit returns_rf esg, legend(label(1 ESG)))(qfit returns_rf esgcomb,
    > legend(label(2 ESG Combined))), title("US Market: Excess Returns per ESG Sco
    > re")

244 . graph export USMarket.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/USMarket.pdf written in PDF format)

245 .
246 . /*
    > twoway (qfit returns_rf esgcomb), title("US Market: ESG Combined & Excess Re
    > turns")
    > graph export USMarket_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb), title("US Market: ESG Combined & Excess Re
    > turns")
    > graph export USMarket_ESGcomb.pdf,replace
    > */
247 .
```

```
248 . ////////////Regressions for Basic Materials (3-4) B //////////////
    >
249 . //Fama-French 3 Factor
250 .
251 . ** ESG
252 .
253 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      46.25
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4325
                                                    Root MSE          =     .33463

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8784093   .2017553     4.35   0.000     .4815552    1.275263
         SMB |   5.553492   1.158868     4.79   0.000     3.273991    7.832994
         HML |   -.504844   .3672505    -1.37   0.170    -1.227228    .2175403
   dummy_ESGA |   .0467485   .0644191     0.73   0.469    -.0799642    .1734613
   dummy_ESGB |  -.0237512   .0498354    -0.48   0.634    -.1217779    .0742754
   dummy_ESGC |   .0436808    .050935     0.86   0.392    -.0565086    .1438703
        _cons |   .1206338   .0558396     2.16   0.031      .010797    .2304707
------------------------------------------------------------------------------

254 . estimates store r3_1

255 .
256 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      47.20
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4327
                                                    Root MSE          =     .33457
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.874789	.2016483	4.34	0.000	.4781453	1.271433
SMB	5.658648	1.148534	4.93	0.000	3.399473	7.917823
HML	-.5310851	.3640511	-1.46	0.146	-1.247176	.185006
dummy_ESGB	-.0665021	.0534923	-1.24	0.215	-.1717217	.0387176
dummy_ESGC	.0009216	.0536846	0.02	0.986	-.1046765	.1065196
dummy_ESGD	-.0499479	.0622176	-0.80	0.423	-.1723304	.0724345
_cons	.1650516	.0592911	2.78	0.006	.0484256	.2816776

```
257 . estimates store r4_1

258 .
259 . ** ESG combined
260 .
261 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Basic Materials", vce(robust)
```

Linear regression

Number of obs	=	345
F(6, 338)	=	46.19
Prob > F	=	0.0000
R-squared	=	0.4308
Root MSE	=	.33513

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8641497	.2021902	4.27	0.000	.4664401	1.261859
SMB	5.639509	1.162572	4.85	0.000	3.352721	7.926297
HML	-.5257404	.3673325	-1.43	0.153	-1.248286	.1968054
dummy_ESGAA	.0332251	.0646302	0.51	0.608	-.0939029	.1603531
dummy_ESGBB	-.037155	.0514497	-0.72	0.471	-.1383569	.064047
dummy_ESGCC	.0148528	.0509368	0.29	0.771	-.0853402	.1150459
_cons	.1388102	.0576957	2.41	0.017	.0253223	.2522981

```
262 . estimates store r3_2

263 .
264 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      47.14
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4308
                                                    Root MSE          =     .33512

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8625479    .201995     4.27   0.000     .4652223    1.259873
         SMB |    5.70616   1.146677     4.98   0.000     3.450638    7.961682
         HML |  -.5429949   .3623162    -1.50   0.135    -1.255673    .1696836
 dummy_ESGBB |  -.0655484   .0541306    -1.21   0.227    -.1720237     .040927
 dummy_ESGCC |  -.0134524   .0528799    -0.25   0.799    -.1174675    .0905626
 dummy_ESGDD |  -.0320044   .0629328    -0.51   0.611    -.1557936    .0917849
       _cons |   .1681048   .0595513     2.82   0.005     .0509669    .2852428
------------------------------------------------------------------------------

265 . estimates store r4_2

266 .
267 . ** E
268 .
269 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      46.95
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4306
                                                    Root MSE          =      .3352
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8704041	.2044064	4.26	0.000	.4683351	1.272473
SMB	5.595014	1.167715	4.79	0.000	3.29811	7.891918
HML	-.5245398	.3684942	-1.42	0.156	-1.249371	.200291
dummy_EA	-.0066174	.0531103	-0.12	0.901	-.1110858	.0978509
dummy_EB	-.0522814	.0465219	-1.12	0.262	-.1437903	.0392276
dummy_EC	.009777	.0496289	0.20	0.844	-.0878434	.1073975
_cons	.1450914	.0508994	2.85	0.005	.0449719	.245211

```
270 . estimates store r3_3

271 .
272 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Basic Materials", vce(robust)

Linear regression                               Number of obs     =        345
                                                F(6, 338)         =      48.36
                                                Prob > F          =     0.0000
                                                R-squared         =     0.4306
                                                Root MSE          =     .3352
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8701245	.2048049	4.25	0.000	.4672717	1.272977
SMB	5.588408	1.16422	4.80	0.000	3.29838	7.878436
HML	-.5230162	.3689194	-1.42	0.157	-1.248683	.2026509
dummy_EB	-.048447	.0468801	-1.03	0.302	-.1406606	.0437666
dummy_EC	.0136098	.0495606	0.27	0.784	-.0838762	.1110958
dummy_ED	.0029511	.0521954	0.06	0.955	-.0997176	.1056198
_cons	.1411928	.0516055	2.74	0.007	.0396844	.2427011

```
273 . estimates store r4_3

274 .
275 . ** S
276 .
277 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      46.70
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4303
                                                    Root MSE          =     .33526

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8798472   .2019432     4.36   0.000     .4826235    1.277071
         SMB |   5.586545   1.163462     4.80   0.000     3.298006    7.875083
         HML |  -.5317672   .3676724    -1.45   0.149    -1.254981     .191447
    dummy_SA |  -.0727922   .0609921    -1.19   0.234    -.1927642    .0471798
    dummy_SB |  -.0244273   .0528135    -0.46   0.644    -.1283119    .0794574
    dummy_SC |  -.0303351   .0523812    -0.58   0.563    -.1333693     .072699
       _cons |   .1610176   .0593724     2.71   0.007     .0442317    .2778035
------------------------------------------------------------------------------

278 . estimates store r3_4

279 .
280 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      47.34
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4298
                                                    Root MSE          =     .33543
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8782378	.202354	4.34	0.000	.4802061	1.27627
SMB	5.473942	1.147796	4.77	0.000	3.216218	7.731665
HML	-.5033665	.3642305	-1.38	0.168	-1.21981	.2130775
dummy_SB	.0348802	.0497873	0.70	0.484	-.0630518	.1328123
dummy_SC	.0288959	.0493865	0.59	0.559	-.0682478	.1260396
dummy_SD	.0616691	.0609012	1.01	0.312	-.0581241	.1814622
_cons	.1006031	.0564731	1.78	0.076	-.0104798	.2116861

```
281 . estimates store r4_4

282 .
283 . ** S
284 .
285 .
286 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Basic Materials", vce(robust)

Linear regression                               Number of obs     =        345
                                                F(6, 338)         =      47.95
                                                Prob > F          =     0.0000
                                                R-squared         =     0.4331
                                                Root MSE          =     .33444
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8662228	.2028488	4.27	0.000	.4672178	1.265228
SMB	5.530588	1.166639	4.74	0.000	3.235802	7.825375
HML	-.5199463	.3682849	-1.41	0.159	-1.244365	.2044728
dummy_GA	-.051914	.0594637	-0.87	0.383	-.1688796	.0650516
dummy_GB	.0035752	.0588093	0.06	0.952	-.1121031	.1192535
dummy_GC	-.0698882	.063201	-1.11	0.270	-.194205	.0544286
_cons	.1639553	.0606948	2.70	0.007	.0445682	.2833424

```
287 . estimates store r3_5

288 .
289 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        345
                                                    F(6, 338)         =      46.91
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.4330
                                                    Root MSE          =     .33447

    ------------------------------------------------------------------------------
                 |               Robust
      returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
    -------------+----------------------------------------------------------------
           mktrf |   .8702876   .2034347     4.28   0.000       .47013    1.270445
             SMB |   5.410504   1.172009     4.62   0.000     3.105155    7.715854
             HML |  -.4896461   .3689855    -1.33   0.185    -1.215443    .2361511
        dummy_GB |    .051677   .0435254     1.19   0.236    -.0339378    .1372918
        dummy_GC |  -.0224466   .0483634    -0.46   0.643    -.1175778    .0726847
        dummy_GD |   .0576506   .0675923     0.85   0.394    -.0753039    .1906052
           _cons |   .1143042   .0460433     2.48   0.014     .0237367    .2048718
    ------------------------------------------------------------------------------

290 . estimates store r4_5

291 .
292 . ** Final
293 .
294 . esttab r3_1 r3_2 r3_3 r3_4 r3_5 using FF_Estimations.rtf, r2 se star(* 0.10
    > ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

295 . esttab r3_1 r3_2 r3_3 r3_4 r3_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------
                          (1)             (2)             (3)             (4)
    >         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ------------------------------------------------------------------------------
    > ------------
    mktrf               0.878***        0.864***        0.870***        0.880***
    >       0.866***
                       (0.202)         (0.202)         (0.204)         (0.202)
    >     (0.203)
```

```
SMB                 5.553***        5.640***        5.595***        5.587***
>       5.531***
                   (1.159)         (1.163)         (1.168)         (1.163)
>     (1.167)

HML                -0.505          -0.526          -0.525          -0.532
>      -0.520
                   (0.367)         (0.367)         (0.368)         (0.368)
>     (0.368)

dummy_ESGA          0.0467
>
                  (0.0644)
>

dummy_ESGB         -0.0238
>
                  (0.0498)
>

dummy_ESGC          0.0437
>
                  (0.0509)
>

dummy_ESGAA                         0.0332
>
                                   (0.0646)
>

dummy_ESGBB                        -0.0372
>
                                   (0.0514)
>

dummy_ESGCC                         0.0149
>
                                   (0.0509)
>

dummy_EA                                          -0.00662
>
                                                  (0.0531)
>
```

dummy_EB	-0.0523		
	(0.0465)		
dummy_EC	0.00978		
	(0.0496)		
dummy_SA		-0.0728	
		(0.0610)	
dummy_SB		-0.0244	
		(0.0528)	
dummy_SC		-0.0303	
		(0.0524)	
dummy_GA	-0.0519		
	(0.0595)		
dummy_GB	0.00358		
	(0.0588)		
dummy_GC	-0.0699		
	(0.0632)		

```
_cons                0.121**          0.139**          0.145***         0.161***
>       0.164***
                    (0.0558)         (0.0577)         (0.0509)         (0.0594)
>     (0.0607)
------------------------------------------------------------------------------------
> ──────────────
N                      345              345              345              345
>         345
R-sq                 0.432            0.431            0.431            0.430
>       0.433
------------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

296 . esttab r4_1 r4_2 r4_3 r4_4 r4_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------------
> ──────────────
                        (1)              (2)              (3)              (4)
>         (5)
                 returns_rf       returns_rf       returns_rf       returns_rf
>  returns_rf
------------------------------------------------------------------------------------
> ──────────────
mktrf                0.875***         0.863***         0.870***         0.878***
>       0.870***
                    (0.202)          (0.202)          (0.205)          (0.202)
>     (0.203)

SMB                  5.659***         5.706***         5.588***         5.474***
>       5.411***
                    (1.149)          (1.147)          (1.164)          (1.148)
>     (1.172)

HML                 -0.531           -0.543           -0.523           -0.503
>      -0.490
                    (0.364)          (0.362)          (0.369)          (0.364)
>     (0.369)

dummy_ESGB          -0.0665
>
                   (0.0535)
>
```

dummy_ESGC	0.000922			
	(0.0537)			
dummy_ESGD	-0.0499			
	(0.0622)			
dummy_ESGBB		-0.0655		
		(0.0541)		
dummy_ESGCC		-0.0135		
		(0.0529)		
dummy_ESGDD		-0.0320		
		(0.0629)		
dummy_EB			-0.0484	
			(0.0469)	
dummy_EC			0.0136	
			(0.0496)	
dummy_ED			0.00295	
			(0.0522)	
dummy_SB				0.0349
				(0.0498)

dummy_SC				0.0289
				(0.0494)
dummy_SD				0.0617
				(0.0609)
dummy_GB	0.0517			
	(0.0435)			
dummy_GC	-0.0224			
	(0.0484)			
dummy_GD	0.0577			
	(0.0676)			
_cons	0.165***	0.168***	0.141***	0.101*
	0.114**			
	(0.0593)	(0.0596)	(0.0516)	(0.0565)
	(0.0460)			
N	345	345	345	345
	345			
R-sq	0.433	0.431	0.431	0.430
	0.433			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
297 .
298 . //Sharpe Ratio
299 .
300 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        336
                                                    F(7, 328)         =       3.46
                                                    Prob > F          =     0.0014
                                                    R-squared         =     0.0512
                                                    Root MSE          =     1.1567

------------------------------------------------------------------------------
> ----
             |               Robust
SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.2102712   .2473187    -0.85   0.396    -.6968023    .2762
> 598
  dummy_ESGB |   .0475312   .1927896     0.25   0.805    -.3317289    .4267
> 912
  dummy_ESGC |   .1105303   .1679918     0.66   0.511    -.2199471    .4410
> 076
      mktcap |   .0000244   5.35e-06     4.56   0.000     .0000139    .0000
> 349
     debtequ |   .0088565   .0276656     0.32   0.749    -.0455679    .0632
> 808
revenuepersh~e |    .000881   .0017705     0.50   0.619     -.002602     .004
> 364
 currentratio |   .0187281   .0723115     0.26   0.796    -.1235247     .160
> 981
       _cons |   .0178044   .2807477     0.06   0.949    -.5344888    .5700
> 977
------------------------------------------------------------------------------
> ----
```

```
301 . estimates store rb_1

302 .
303 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
    > uepershare currentratio if icbindustryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        336
                                                    F(7, 328)         =       3.36
                                                    Prob > F          =     0.0018
                                                    R-squared         =     0.0494
                                                    Root MSE          =     1.1578

------------------------------------------------------------------------------
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
  dummy_ESGAA |  -.2253344   .2537389    -0.89   0.375    -.7244954    .273827
  dummy_ESGBB |    .028036   .1959846     0.14   0.886    -.3575093    .413581
  dummy_ESGCC |   .0449671   .1666136     0.27   0.787    -.2827989    .372733
       mktcap |   .0000241   5.37e-06     4.49   0.000     .0000135    .000034
      debtequ |   .0099079   .0279962     0.35   0.724    -.0451669    .064982
revenuepershare |    .000954   .0017698     0.54   0.590    -.0025276    .004435
  currentratio |   .0207679    .071985     0.29   0.773    -.1208427    .162378
         _cons |   .0402913   .2799807     0.14   0.886    -.5104932    .591075
------------------------------------------------------------------------------
```

```
304 . estimates store rb_2

305 .
306 . ** STD regression
307 .
308 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Basic Materials", vce(robu
    > st)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =       340
    Group variable: ric                             Number of groups  =        70

    R-sq:                                           Obs per group:
         within  = 0.2959                                         min =         2
         between = 0.2840                                         avg =       4.9
         overall = 0.2814                                         max =         5

                                                    Wald chi2(11)     =    275.09
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 70 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0673474   .0197225     3.41   0.001     .0286921    .1060
    > 027
        _Iyear_2017 |   -.065496   .0169582    -3.86   0.000    -.0987334   -.0322
    > 585
        _Iyear_2018 |  -.0320896   .0179506    -1.79   0.074    -.0672721     .003
    > 093
        _Iyear_2019 |   .0774165   .0194626     3.98   0.000     .0392705    .1155
    > 624
         dummy_ESGA |   .0660002   .0465663     1.42   0.156     -.025268    .1572
    > 685
         dummy_ESGB |  -.0212871   .0306474    -0.69   0.487    -.0813548    .0387
    > 807
         dummy_ESGC |  -.0194352   .0277125    -0.70   0.483    -.0737506    .0348
    > 803
             mktcap |  -4.48e-06   9.99e-07    -4.48   0.000    -6.44e-06   -2.52e
    > -06
            debtequ |    .007871   .0018319     4.30   0.000     .0042804    .0114
    > 615
    revenuepershare |  -.0008063   .0003493    -2.31   0.021    -.0014909   -.0001
```

```
> 217
   currentratio |   .0020945   .0115536     0.18   0.856    -.0205501    .0247
> 391
          _cons |   .4103641   .0440506     9.32   0.000     .3240265    .4967
> 016
---------------+----------------------------------------------------------------
> ---
        sigma_u |  .11006428
        sigma_e |  .10320493
            rho |  .53212965   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ---

309 . estimates store rb_3

310 .
311 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Basic Materials", vce(r
> obust)
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =       340
Group variable: ric                             Number of groups  =        70

R-sq:                                           Obs per group:
     within  = 0.2907                                         min =         2
     between = 0.2722                                         avg =       4.9
     overall = 0.2739                                         max =         5

                                                Wald chi2(11)     =    269.65
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                    (Std. Err. adjusted for 70 clusters in r
> ic)
---------------+----------------------------------------------------------------
> ---
               |               Robust
    sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
---------------+----------------------------------------------------------------
> ---
    _Iyear_2016 |   .0665081   .0198048     3.36   0.001     .0276914    .1053
> 247
    _Iyear_2017 |  -.0657807   .0169347    -3.88   0.000    -.0989721   -.0325
> 893
    _Iyear_2018 |  -.0297517    .017619    -1.69   0.091    -.0642844     .004
> 781
    _Iyear_2019 |   .0784575   .0196849     3.99   0.000     .0398758    .1170
> 392
```

```
    dummy_ESGAA |    .008329   .0467195     0.18   0.859    -.0832395    .0998
> 976
    dummy_ESGBB |   -.0248792   .0327457    -0.76   0.447    -.0890595    .0393
> 012
    dummy_ESGCC |   -.0317562    .026856    -1.18   0.237     -.084393    .0208
> 807
         mktcap |   -4.07e-06   1.05e-06    -3.86   0.000    -6.13e-06   -2.00e
> -06
        debtequ |    .0081073   .0018302     4.43   0.000     .0045203    .0116
> 944
revenuepershare |   -.0008433   .0003562    -2.37   0.018    -.0015415   -.0001
> 452
   currentratio |    .0021498   .0112369     0.19   0.848    -.0198741    .0241
> 737
          _cons |    .4202359   .0443662     9.47   0.000     .3332798     .507
> 192
----------------+------------------------------------------------------------
> ----
        sigma_u |   .11071221
        sigma_e |   .10351315
            rho |   .53356714   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

312 . estimates store rb_4

313 .
314 . ** Average returns-rf
315 .
316 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Basic Materials", vce(robust)

    Linear regression                               Number of obs     =        336
                                                    F(7, 328)         =       2.07
                                                    Prob > F          =     0.0464
                                                    R-squared         =     0.0279
                                                    Root MSE          =     .43652
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.0239593   .1032549    -0.23   0.817    -.2270846     .179
> 166
  dummy_ESGB |   .0133503   .0709652     0.19   0.851    -.1262542    .1529
> 547
  dummy_ESGC |   .0682397   .0699917     0.97   0.330    -.0694496    .2059
> 291
      mktcap |   5.13e-06   1.54e-06     3.33   0.001     2.10e-06    8.16e
> -06
    debtequ |   .0126894   .0151783     0.84   0.404    -.0171696    .0425
> 485
revenuepershare |  -.0002179   .0006554    -0.33   0.740    -.0015073    .0010
> 715
currentratio |   .0221285    .027923     0.79   0.429    -.0328023    .0770
> 593
      _cons |  -.0227319   .1057139    -0.22   0.830    -.2306947    .1852
> 309
------------------------------------------------------------------------------
> ----

317 . estimates store rb_5

318 .
319 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Basic Materials", vce(robust)

Linear regression                               Number of obs     =        336
                                                F(7, 328)         =       1.91
                                                Prob > F          =     0.0679
                                                R-squared         =     0.0251
                                                Root MSE          =     .43713
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |  -.0458046    .101718    -0.45   0.653    -.2459066    .1542
> 975
  dummy_ESGBB |  -.0031329   .0733705    -0.04   0.966     -.147469    .1412
> 031
  dummy_ESGCC |   .0346824   .0693662     0.50   0.617    -.1017765    .1711
> 412
       mktcap |   5.18e-06   1.56e-06     3.32   0.001     2.11e-06    8.26e
> -06
      debtequ |   .0131806   .0153436     0.86   0.391    -.0170036    .0433
> 648
revenuepershare |  -.0002145    .000657    -0.33   0.744    -.0015069     .001
> 078
 currentratio |   .0224881    .027738     0.81   0.418    -.0320787    .0770
> 549
        _cons |  -.0061049   .1060514    -0.06   0.954    -.2147317    .2025
> 219
------------------------------------------------------------------------------
> ----

320 . estimates store rb_6

321 .
322 . **Treynor Ratio
323 .
324 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Basic Materials", vce(robust)

Linear regression                               Number of obs     =        324
                                                F(7, 316)         =       2.90
                                                Prob > F          =     0.0060
                                                R-squared         =     0.0414
                                                Root MSE          =     .3513
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.0395661   .0909022    -0.44   0.664    -.2184161     .1392
> 839
  dummy_ESGB |  -.0344698   .0588833    -0.59   0.559    -.1503226      .081
> 383
  dummy_ESGC |   .0053307   .0547205     0.10   0.922    -.1023319     .1129
> 933
      mktcap |   5.98e-06   1.47e-06     4.07   0.000     3.09e-06    8.87e
> -06
    debtequ |   .0163486   .0114297     1.43   0.154    -.0061393     .0388
> 366
revenuepershare |   -.000073   .0005963    -0.12   0.903    -.0012462     .0011
> 003
currentratio |   .0043539    .017309     0.25   0.802    -.0297016     .0384
> 095
       _cons |   .0210447   .0804314     0.26   0.794    -.1372041     .1792
> 935
------------------------------------------------------------------------------
> ----

325 . estimates store rb_7

326 .
327 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
> nuepershare currentratio if icbindustryname=="Basic Materials", vce(robust)

Linear regression                               Number of obs     =        324
                                                F(7, 316)         =       2.84
                                                Prob > F          =     0.0070
                                                R-squared         =     0.0412
                                                Root MSE          =     .35133
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |  -.0399836   .0936831    -0.43   0.670    -.2243051    .1443
> 379
  dummy_ESGBB |   -.041311    .059127    -0.70   0.485    -.1576433    .0750
> 213
  dummy_ESGCC |  -.0050697   .0531142    -0.10   0.924    -.1095719    .0994
> 324
       mktcap |   5.97e-06   1.49e-06     4.01   0.000     3.04e-06    8.91e
> -06
      debtequ |   .0166433   .0113954     1.46   0.145    -.0057771    .0390
> 637
revenuepershare |  -.0000659   .0005944    -0.11   0.912    -.0012353    .0011
> 036
 currentratio |   .0045179   .0170276     0.27   0.791     -.028984    .0380
> 197
        _cons |   .0251325   .0791762     0.32   0.751    -.1306467    .1809
> 117
------------------------------------------------------------------------------
> ----

328 . estimates store rb_8

329 .
330 . esttab rb_1 rb_2 rb_7 rb_8 rb_3 rb_4 using SR_Estimations.rtf, r2 se star(*
> 0.10 ** 0.05 *** 0.01) append modelwidth(6)
(output written to SR_Estimations.rtf)

331 . esttab rb_1 rb_2 rb_7 rb_8 rb_3 rb_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ----------------------------
                      (1)             (2)             (3)             (4)
>         (5)             (6)
              SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
>  sd_returns      sd_returns
------------------------------------------------------------------------------
> ----------------------------
dummy_ESGA         -0.210                          -0.0396
>      0.0660
                  (0.247)                         (0.0909)
>    (0.0466)
```

```
dummy_ESGB          0.0475                          -0.0345
>     -0.0213
                   (0.193)                         (0.0589)
>    (0.0306)

dummy_ESGC           0.111                          0.00533
>     -0.0194
                   (0.168)                         (0.0547)
>    (0.0277)

mktcap           0.0000244***    0.0000241***   0.00000598***   0.00000597***
> -0.00000448***  -0.00000407***
              (0.00000535)    (0.00000537)    (0.00000147)    (0.00000149)    (
> 0.000000999)    (0.00000105)

debtequ            0.00886         0.00991          0.0163          0.0166
>     0.00787***      0.00811***
                  (0.0277)        (0.0280)        (0.0114)        (0.0114)
>   (0.00183)       (0.00183)

revenueper~e     0.000881        0.000954      -0.0000730      -0.0000659
>   -0.000806**     -0.000843**
                 (0.00177)       (0.00177)      (0.000596)      (0.000594)
>  (0.000349)      (0.000356)

currentratio       0.0187          0.0208         0.00435         0.00452
>     0.00209         0.00215
                  (0.0723)        (0.0720)        (0.0173)        (0.0170)
>    (0.0116)        (0.0112)

dummy_ESGAA                         -0.225                          -0.0400
>                    0.00833
                                   (0.254)                         (0.0937)
>                   (0.0467)

dummy_ESGBB                         0.0280                          -0.0413
>                   -0.0249
                                   (0.196)                         (0.0591)
>                   (0.0327)

dummy_ESGCC                         0.0450                         -0.00507
>                   -0.0318
                                   (0.167)                         (0.0531)
>                   (0.0269)
```

```
    _Iyear_2016
    >      0.0673***       0.0665***

    >    (0.0197)        (0.0198)

    _Iyear_2017
    >     -0.0655***      -0.0658***

    >    (0.0170)        (0.0169)

    _Iyear_2018
    >     -0.0321*        -0.0298*

    >    (0.0180)        (0.0176)

    _Iyear_2019
    >      0.0774***       0.0785***

    >    (0.0195)        (0.0197)

    _cons              0.0178          0.0403          0.0210          0.0251
    >       0.410***        0.420***
                      (0.281)         (0.280)         (0.0804)        (0.0792)
    >    (0.0441)        (0.0444)
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
    N                     336             336             324             324
    >         340             340
    R-sq                0.051           0.049           0.041           0.041
    >
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

332 .
333 . ** Graph
```

```
334 .
335 . twoway (qfit returns_rf esg if icbindustryname=="Basic Materials", legend(la
    > bel(1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Basic Materials",
    > legend(label(2 ESG Combined))), title("Basic Materials: Excess Returns per E
    > SG Score")

336 . graph export BasicMaterials.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/BasicMaterials.pdf written in PDF format)

337 .
338 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Basic Materials"), title("B
    > asic Materials: ESG & Excess Returns")
    > graph export BasicMaterials_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Basic Materials"), titl
    > e("Basic Materials: ESG Combined & Excess Returns")
    > graph export BasicMaterials_ESGcomb.pdf,replace
    > */
339 .
340 . ////////////Regressions for Consumer Discretionary (5-6) C /////////////
    >
341 . //Fama-French 3 Factor
342 .
343 . ** ESG
344 .
345 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      27.17
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1486
                                                    Root MSE          =     .33562

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8524564     .14859     5.74   0.000     .5608603    1.144052
         SMB |   1.055876    .7591744     1.39   0.165    -.4339434    2.545695
         HML |  -.2902415    .2378806    -1.22   0.223    -.7570632    .1765801
   dummy_ESGA |  -.0918449    .0445012    -2.06   0.039    -.1791749   -.0045149
   dummy_ESGB |  -.0910356    .0318693    -2.86   0.004    -.1535765   -.0284946
   dummy_ESGC |  -.0730293    .0312943    -2.33   0.020    -.1344419   -.0116167
        _cons |   .0668791    .0343993     1.94   0.052    -.0006269     .134385
------------------------------------------------------------------------------
```

```
346 . estimates store r5_1

347 .
348 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      27.51
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1508
                                                    Root MSE          =     .33518

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8557919   .1489256     5.75   0.000     .5635374    1.148046
         SMB |   .8980916   .7598225     1.18   0.238    -.5929993    2.389183
         HML |  -.2538598   .2375594    -1.07   0.286    -.7200511    .2123315
  dummy_ESGB |  -.0019976   .0328761    -0.06   0.952    -.0665142     .062519
  dummy_ESGC |   .0161099   .0322828     0.50   0.618    -.0472426    .0794624
  dummy_ESGD |   .1042178   .0407179     2.56   0.011      .024312    .1841235
       _cons |   -.024707   .0360198    -0.69   0.493    -.0953929    .0459789
------------------------------------------------------------------------------

349 . estimates store r6_1

350 .
351 . ** ESG combined
352 .
353 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      27.28
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1486
                                                    Root MSE          =     .33562
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8460313	.1488636	5.68	0.000	.5538984	1.138164
SMB	1.076985	.7610726	1.42	0.157	-.4165589	2.57053
HML	-.2960658	.2385201	-1.24	0.215	-.7641426	.1720109
dummy_ESGAA	-.0738336	.0510184	-1.45	0.148	-.1739531	.026286
dummy_ESGBB	-.0972574	.0322716	-3.01	0.003	-.1605878	-.0339271
dummy_ESGCC	-.0660558	.0306149	-2.16	0.031	-.126135	-.0059766
_cons	.0645131	.0343062	1.88	0.060	-.0028101	.1318364

```
354 . estimates store r5_2

355 .
356 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Consumer Discretionary", vce(robust)

Linear regression                               Number of obs     =        974
                                                F(6, 967)         =      27.55
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1506
                                                Root MSE          =     .33522
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8494032	.1490768	5.70	0.000	.5568519	1.141954
SMB	.9362008	.7636858	1.23	0.221	-.5624715	2.434873
HML	-.2634245	.238754	-1.10	0.270	-.7319602	.2051112
dummy_ESGBB	-.0193817	.0362762	-0.53	0.593	-.0905709	.0518075
dummy_ESGCC	.0117989	.0346895	0.34	0.734	-.0562765	.0798743
dummy_ESGDD	.0922424	.0428587	2.15	0.032	.0081357	.1763492
_cons	-.0156048	.0395152	-0.39	0.693	-.0931503	.0619406

```
357 . estimates store r6_2

358 .
359 . ** E
360 .
361 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      29.06
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1461
                                                    Root MSE          =     .33611

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8385033   .1480971     5.66   0.000     .5478746    1.129132
         SMB |   .9786048   .7623334     1.28   0.200    -.5174137    2.474623
         HML |  -.2531732   .2386369    -1.06   0.289    -.7214791    .2151326
    dummy_EA |   .0376219   .0279512     1.35   0.179      -.01723    .0924739
    dummy_EB |  -.0482828   .0313481    -1.54   0.124    -.1098009    .0132353
    dummy_EC |   .0351228   .0299897     1.17   0.242    -.0237296    .0939752
       _cons |  -.0064903   .0298278    -0.22   0.828    -.0650249    .0520443
------------------------------------------------------------------------------

362 . estimates store r5_3

363 .
364 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      28.81
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1456
                                                    Root MSE          =     .33621
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8375065	.1480216	5.66	0.000	.547026	1.127987
SMB	1.03738	.7592095	1.37	0.172	-.4525083	2.527268
HML	-.2673569	.2380768	-1.12	0.262	-.7345637	.1998499
dummy_EB	-.0813744	.0307369	-2.65	0.008	-.141693	-.0210557
dummy_EC	.002011	.0294156	0.07	0.946	-.0557148	.0597368
dummy_ED	-.032003	.0279521	-1.14	0.253	-.0868568	.0228508
_cons	.0275	.0282395	0.97	0.330	-.0279179	.0829178

```
365 . estimates store r6_3

366 .
367 . ** S
368 .
369 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

Linear regression                               Number of obs     =        974
                                                F(6, 967)         =      27.49
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1525
                                                Root MSE          =     .33484
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8282345	.1478353	5.60	0.000	.5381195	1.11835
SMB	1.199081	.7575926	1.58	0.114	-.2876337	2.685797
HML	-.3168473	.2366917	-1.34	0.181	-.7813359	.1476414
dummy_SA	-.0778353	.0366944	-2.12	0.034	-.1498451	-.0058255
dummy_SB	-.0942577	.0342695	-2.75	0.006	-.1615088	-.0270066
dummy_SC	-.1089908	.0319498	-3.41	0.001	-.1716897	-.046292
_cons	.0888442	.0356902	2.49	0.013	.0188051	.1588832

```
370 . estimates store r5_4

371 .
372 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      27.67
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1556
                                                    Root MSE          =     .33424

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    .829834   .1479966     5.61   0.000     .5394025    1.120265
         SMB |    1.063731   .7521008     1.41   0.158    -.4122072    2.539669
         HML |   -.2850192   .2350099    -1.21   0.226    -.7462073    .1761689
    dummy_SB |   -.0116055   .0295889    -0.39   0.695    -.0696714    .0464604
    dummy_SC |   -.0261015   .0267644    -0.98   0.330    -.0786245    .0264214
    dummy_SD |    .1029307   .0373244     2.76   0.006     .0296847    .1761768
       _cons |    .0041217   .0304541     0.14   0.892    -.0556421    .0638854
------------------------------------------------------------------------------

373 . estimates store r6_4

374 .
375 . ** G
376 .
377 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

    Linear regression                               Number of obs     =        974
                                                    F(6, 967)         =      28.19
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1461
                                                    Root MSE          =      .3361
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8371763	.1481455	5.65	0.000	.5464526	1.1279
SMB	1.027726	.7628445	1.35	0.178	-.469296	2.524747
HML	-.2821236	.2393727	-1.18	0.239	-.7518734	.1876262
dummy_GA	-.0523096	.0383595	-1.36	0.173	-.1275871	.0229679
dummy_GB	.0058305	.0314985	0.19	0.853	-.0559829	.0676439
dummy_GC	.046701	.0338729	1.38	0.168	-.019772	.1131739
_cons	-.0058606	.0347727	-0.17	0.866	-.0740993	.0623781

```
378 . estimates store r5_5

379 .
380 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Consumer Discretionary", vce(robust)

Linear regression                               Number of obs     =        974
                                                F(6, 967)         =      28.21
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1458
                                                Root MSE          =     .33616
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8349871	.148267	5.63	0.000	.5440249	1.125949
SMB	.968756	.7632098	1.27	0.205	-.5289824	2.466494
HML	-.2682679	.2391951	-1.12	0.262	-.7376692	.2011334
dummy_GB	.0480224	.0284434	1.69	0.092	-.0077954	.1038403
dummy_GC	.0889043	.0311118	2.86	0.004	.0278499	.1499586
dummy_GD	.0442023	.039032	1.13	0.258	-.0323948	.1207995
_cons	-.0485424	.0330387	-1.47	0.142	-.1133781	.0162934

```
381 . estimates store r6_5

382 .
383 . ** Final
384 .
385 . esttab r5_1 r5_2 r5_3 r5_4 r5_5 using FF_Estimations.rtf, r2 se star(* 0.10
    > ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

386 . esttab r5_1 r5_2 r5_3 r5_4 r5_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
                          (1)             (2)             (3)             (4)
    >         (5)
                   returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
    mktrf               0.852***        0.846***        0.839***        0.828***
    >       0.837***
                       (0.149)         (0.149)         (0.148)         (0.148)
    >     (0.148)

    SMB                 1.056           1.077           0.979           1.199
    >       1.028
                       (0.759)         (0.761)         (0.762)         (0.758)
    >     (0.763)

    HML                -0.290          -0.296          -0.253          -0.317
    >      -0.282
                       (0.238)         (0.239)         (0.239)         (0.237)
    >     (0.239)

    dummy_ESGA         -0.0918**
    >
                      (0.0445)
    >

    dummy_ESGB         -0.0910***
    >
                      (0.0319)
    >

    dummy_ESGC         -0.0730**
    >
                      (0.0313)
    >
```

dummy_ESGAA	-0.0738			
	(0.0510)			
dummy_ESGBB	-0.0973***			
	(0.0323)			
dummy_ESGCC	-0.0661**			
	(0.0306)			
dummy_EA		0.0376		
		(0.0280)		
dummy_EB		-0.0483		
		(0.0313)		
dummy_EC		0.0351		
		(0.0300)		
dummy_SA			-0.0778**	
			(0.0367)	
dummy_SB			-0.0943***	
			(0.0343)	
dummy_SC			-0.109***	
			(0.0319)	

```
dummy_GA
>      -0.0523

>     (0.0384)

dummy_GB
>      0.00583

>     (0.0315)

dummy_GC
>       0.0467

>     (0.0339)

_cons              0.0669*         0.0645*        -0.00649          0.0888**
>    -0.00586
                  (0.0344)        (0.0343)        (0.0298)        (0.0357)
>     (0.0348)
------------------------------------------------------------------------------
> ──────────────
N                     974             974             974             974
>         974
R-sq                0.149           0.149           0.146           0.153
>       0.146
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

387 . esttab r6_1 r6_2 r6_3 r6_4 r6_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf              0.856***        0.849***        0.838***        0.830***
>       0.835***
                  (0.149)         (0.149)         (0.148)         (0.148)
>     (0.148)
```

```
SMB                 0.898           0.936           1.037           1.064
>       0.969
                  (0.760)         (0.764)         (0.759)         (0.752)
>     (0.763)

HML                -0.254          -0.263          -0.267          -0.285
>      -0.268
                  (0.238)         (0.239)         (0.238)         (0.235)
>     (0.239)

dummy_ESGB       -0.00200
>
                  (0.0329)
>

dummy_ESGC         0.0161
>
                  (0.0323)
>

dummy_ESGD          0.104**
>
                  (0.0407)
>

dummy_ESGBB                        -0.0194
>
                                  (0.0363)
>

dummy_ESGCC                         0.0118
>
                                  (0.0347)
>

dummy_ESGDD                         0.0922**
>
                                  (0.0429)
>

dummy_EB                                          -0.0814***
>
                                                  (0.0307)
>
```

dummy_EC		0.00201	
		(0.0294)	
dummy_ED		-0.0320	
		(0.0280)	
dummy_SB			-0.0116
			(0.0296)
dummy_SC			-0.0261
			(0.0268)
dummy_SD			0.103***
			(0.0373)
dummy_GB	0.0480*		
	(0.0284)		
dummy_GC	0.0889***		
	(0.0311)		
dummy_GD	0.0442		
	(0.0390)		

```
_cons              -0.0247         -0.0156          0.0275         0.00412
>     -0.0485
                  (0.0360)        (0.0395)        (0.0282)        (0.0305)
>    (0.0330)
------------------------------------------------------------------------------
> ─────────────
N                     974             974             974             974
>         974
R-sq                0.151           0.151           0.146           0.156
>       0.146
------------------------------------------------------------------------------
> ─────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

388 .
389 . //Sharpe Ratio
390 .
391 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Consumer Discretionary", vce(robus
    > t)

Linear regression                               Number of obs     =        803
                                                F(7, 795)         =       1.87
                                                Prob > F          =     0.0709
                                                R-squared         =     0.0281
                                                Root MSE          =     1.1392

------------------------------------------------------------------------------
> ──┬──
                  │               Robust
    SharpeRatio   │      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
──────────────────┼──────────────────────────────────────────────────────────────
> ──┼──
     dummy_ESGA   │   -.325866   .2108186    -1.55   0.123    -.7396929    .0879
> 609
     dummy_ESGB   │  -.1453372   .1193025    -1.22   0.224    -.3795224    .0888
> 481
     dummy_ESGC   │  -.1112127   .1096178    -1.01   0.311    -.3263871    .1039
> 618
         mktcap   │   4.55e-06   1.35e-06     3.37   0.001     1.90e-06    7.21e
> -06
        debtequ   │   .0028747     .00438     0.66   0.512    -.0057231    .0114
> 725
revenuepershare   │   .0000273   .0004932     0.06   0.956    -.0009408    .0009
> 955
   currentratio   │  -.0177442    .036895    -0.48   0.631    -.0901674    .0546
> 789
```

```
          _cons |   .3483365   .1266548     2.75   0.006     .0997191    .5969
> 539
------------------------------------------------------------------------------
> ----

392 . estimates store rc_1

393 .
394 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
> uepershare currentratio if icbindustryname=="Consumer Discretionary", vce(ro
> bust)

Linear regression                               Number of obs     =        803
                                                F(7, 795)         =       1.93
                                                Prob > F          =     0.0624
                                                R-squared         =     0.0275
                                                Root MSE          =     1.1396

------------------------------------------------------------------------------
> ----
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
 dummy_ESGAA |  -.3043276   .2562914    -1.19   0.235    -.8074155    .1987
> 603
 dummy_ESGBB |   -.161797   .1203571    -1.34   0.179    -.3980522    .0744
> 582
 dummy_ESGCC |  -.1106964   .1077324    -1.03   0.304    -.3221699    .1007
> 771
      mktcap |   4.27e-06   1.25e-06     3.41   0.001     1.81e-06    6.72e
> -06
    debtequ |   .0027424   .0043729     0.63   0.531    -.0058414    .0113
> 263
revenuepershare |   7.19e-06   .0004936     0.01   0.988    -.0009617    .0009
> 761
currentratio |  -.0162835   .0366304    -0.44   0.657    -.0881874    .0556
> 203
      _cons |    .348236   .1262647     2.76   0.006     .1003843    .5960
> 876
------------------------------------------------------------------------------
> ----
```

```
395 . estimates store rc_2

396 .
397 . ** STD regression
398 .
399 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Consumer Discretionary", v
    > ce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =        811
    Group variable: ric                             Number of groups  =        173

    R-sq:                                           Obs per group:
         within  = 0.1578                                         min =          1
         between = 0.1785                                         avg =        4.7
         overall = 0.1596                                         max =          5

                                                    Wald chi2(11)     =     136.34
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 173 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0501079   .0120254     4.17   0.000     .0265385    .0736
    > 773
        _Iyear_2017 |   .0139005   .0123892     1.12   0.262    -.0103818    .0381
    > 828
        _Iyear_2018 |   .0338745   .0110869     3.06   0.002     .0121446    .0556
    > 043
        _Iyear_2019 |   .1284357   .0126518    10.15   0.000     .1036387    .1532
    > 327
         dummy_ESGA |  -.0770301   .0248036    -3.11   0.002    -.1256442    -.028
    > 416
         dummy_ESGB |  -.0481632   .0188939    -2.55   0.011    -.0851945    -.011
    > 132
         dummy_ESGC |  -.0397625   .0146534    -2.71   0.007    -.0684827   -.0110
    > 423
             mktcap |  -5.13e-07   2.09e-07    -2.45   0.014    -9.23e-07   -1.03e
    > -07
            debtequ |   .0001177   .0006483     0.18   0.856     -.001153    .0013
    > 884
    revenuepershare |  -.0001222   .0000797    -1.53   0.125    -.0002785    .0000
```

```
> 341
   currentratio |   .0047234    .005723     0.83   0.409    -.0064936    .0159
> 403
          _cons |   .3280349   .0211207    15.53   0.000      .286639    .3694
> 308
---------------+------------------------------------------------------------
> ---
        sigma_u |  .08631014
        sigma_e |   .1039779
            rho |  .40794608   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ---

400 . estimates store rc_3

401 .
402 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Consumer Discretionary"
> , vce(robust)
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =       811
Group variable: ric                             Number of groups  =       173

R-sq:                                           Obs per group:
     within  = 0.1649                                         min =         1
     between = 0.1681                                         avg =       4.7
     overall = 0.1582                                         max =         5

                                                Wald chi2(11)     =    142.77
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                  (Std. Err. adjusted for 173 clusters in r
> ic)
---------------+------------------------------------------------------------
> ---
               |               Robust
   sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
---------------+------------------------------------------------------------
> ---
   _Iyear_2016 |   .0507688   .0119777     4.24   0.000     .0272928    .0742
> 447
   _Iyear_2017 |   .0134866   .0124644     1.08   0.279    -.0109433    .0379
> 164
   _Iyear_2018 |   .0338287   .0112194     3.02   0.003     .0118391    .0558
> 184
   _Iyear_2019 |   .1278244   .0126797    10.08   0.000     .1029726    .1526
> 762
```

```
    dummy_ESGAA |  -.1015308    .022689    -4.47   0.000    -.1460004   -.0570
> 611
    dummy_ESGBB |  -.0465204   .0181506    -2.56   0.010    -.0820948    -.010
> 946
    dummy_ESGCC |  -.0433042      .0147    -2.95   0.003    -.0721158   -.0144
> 927
         mktcap |  -5.57e-07   2.19e-07    -2.54   0.011    -9.86e-07   -1.27e
> -07
        debtequ |   .0001196   .0006485     0.18   0.854    -.0011514    .0013
> 905
revenuepershare |  -.0001244   .0000804    -1.55   0.121    -.0002819    .0000
> 331
   currentratio |   .0047682   .0056917     0.84   0.402    -.0063873    .0159
> 237
          _cons |   .3296378   .0207628    15.88   0.000     .2889435     .370
> 332
----------------+----------------------------------------------------------------
> ———
        sigma_u |  .08659246
        sigma_e |  .10361759
            rho |  .41120442   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ———

403 . estimates store rc_4

404 .
405 . ** Average returns-rf
406 .
407 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Consumer Discretionary", vce(robust
    > )

    Linear regression                               Number of obs     =        803
                                                    F(7, 795)         =       2.13
                                                    Prob > F          =     0.0386
                                                    R-squared         =     0.0175
                                                    Root MSE          =     .35763
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.0999117   .0552503    -1.81   0.071    -.2083654      .008
> 542
  dummy_ESGB |  -.0725871     .03843    -1.89   0.059    -.1480233     .0028
> 491
  dummy_ESGC |  -.0428575   .0374457    -1.14   0.253    -.1163616     .0306
> 467
      mktcap |   1.01e-06   2.95e-07     3.44   0.001     4.34e-07    1.59e
> -06
     debtequ |   .0011466   .0019283     0.59   0.552    -.0026386     .0049
> 319
revenuepersh~e |   .0000521   .0001595     0.33   0.744     -.000261     .0003
> 652
 currentratio |   .0017483   .0105892     0.17   0.869    -.0190378     .0225
> 343
       _cons |    .097227   .0407798     2.38   0.017     .0171781     .1772
> 759
------------------------------------------------------------------------------
> ----

408 . estimates store rc_5

409 .
410 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Consumer Discretionary", vce(rob
> ust)

Linear regression                               Number of obs     =        803
                                                F(7, 795)         =       2.19
                                                Prob > F          =     0.0330
                                                R-squared         =     0.0171
                                                Root MSE          =     .3577
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |  -.0917569   .0659291    -1.39   0.164    -.2211727    .0376
> 589
  dummy_ESGBB |  -.0750129   .0384401    -1.95   0.051    -.1504691    .0004
> 432
  dummy_ESGCC |  -.0446224   .0366416    -1.22   0.224    -.1165482    .0273
> 034
      mktcap |   9.29e-07   2.73e-07     3.41   0.001     3.94e-07    1.46e
> -06
     debtequ |   .0011439   .0019299     0.59   0.554    -.0026443    .0049
> 321
revenuepershare |   .0000489   .0001594     0.31   0.759     -.000264    .0003
> 619
 currentratio |   .0023831   .0105041     0.23   0.821     -.018236    .0230
> 021
       _cons |   .0965237   .0406846     2.37   0.018     .0166618    .1763
> 857
------------------------------------------------------------------------------
> ----

411 . estimates store rc_6

412 .
413 . **Treynor Ratio
414 .
415 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Consumer Discretionary", vce(robu
> st)

Linear regression                               Number of obs     =        785
                                                F(7, 777)         =       1.61
                                                Prob > F          =     0.1299
                                                R-squared         =     0.0203
                                                Root MSE          =     .42459
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |   -.117389   .0710688    -1.65   0.099    -.2568986     .0221
> 206
  dummy_ESGB |   -.097098   .0472718    -2.05   0.040    -.1898936    -.0043
> 025
  dummy_ESGC |  -.0492356   .0469958    -1.05   0.295    -.1414895     .0430
> 182
      mktcap |   1.30e-06   4.75e-07     2.72   0.007     3.62e-07     2.23e
> -06
     debtequ |  -.0009562   .0013758    -0.70   0.487    -.0036569     .0017
> 445
revenuepersh~e |  -9.25e-06    .000146    -0.06   0.949    -.0002958     .0002
> 773
currentratio |  -.0090862   .0145313    -0.63   0.532    -.0376115     .0194
> 391
       _cons |   .1553716   .0521703     2.98   0.003     .0529601     .2577
> 831
------------------------------------------------------------------------------
> ----
```

```
416 . estimates store rc_7

417 .
418 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Consumer Discretionary", vce(r
    > obust)

Linear regression                               Number of obs     =        785
                                                F(7, 777)         =       1.72
                                                Prob > F          =     0.1020
                                                R-squared         =     0.0203
                                                Root MSE          =     .42459
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |  -.1134432   .0788035    -1.44   0.150    -.2681361    .0412
> 497
  dummy_ESGBB |   -.101382   .0471732    -2.15   0.032    -.1939842   -.0087
> 799
  dummy_ESGCC |  -.0506604   .0462772    -1.09   0.274    -.1415037    .0401
> 828
      mktcap |   1.20e-06   4.49e-07     2.67   0.008     3.17e-07    2.08e
> -06
     debtequ |  -.0009634    .001379    -0.70   0.485    -.0036705    .0017
> 437
revenuepershare |  -.0000127   .0001464    -0.09   0.931       -.0003    .0002
> 746
 currentratio |  -.0083949   .0144502    -0.58   0.561    -.0367609    .0199
> 711
       _cons |   .1546177    .052026     2.97   0.003     .0524895    .2567
> 459
------------------------------------------------------------------------------
> ----

419 . estimates store rc_8

420 .
421 . esttab rc_1 rc_2 rc_7 rc_8 rc_3 rc_4 using SR_Estimations.rtf, r2 se star(*
> 0.10 ** 0.05 *** 0.01) append modelwidth(6)
(output written to SR_Estimations.rtf)

422 . esttab rc_1 rc_2 rc_7 rc_8 rc_3 rc_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ----------------------------
                      (1)             (2)             (3)             (4)
>         (5)             (6)
              SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
>  sd_returns      sd_returns
------------------------------------------------------------------------------
> ----------------------------
dummy_ESGA         -0.326                          -0.117*
>     -0.0770***
                  (0.211)                         (0.0711)
>    (0.0248)
```

```
dummy_ESGB          -0.145                          -0.0971**
>     -0.0482**
                   (0.119)                         (0.0473)
>    (0.0189)

dummy_ESGC          -0.111                          -0.0492
>     -0.0398***
                   (0.110)                         (0.0470)
>    (0.0147)

mktcap          0.00000455***   0.00000427***   0.00000130***   0.00000120*** -
> 0.000000513**  -0.000000557**
              (0.00000135)    (0.00000125)    (0.000000475)    (0.000000449)
>  (0.000000209)    (0.000000219)

debtequ            0.00287         0.00274       -0.000956       -0.000963
>    0.000118         0.000120
                 (0.00438)       (0.00437)       (0.00138)       (0.00138)
>  (0.000648)       (0.000648)

revenueper~e     0.0000273      0.00000719     -0.00000925      -0.0000127
>   -0.000122       -0.000124
                (0.000493)      (0.000494)      (0.000146)      (0.000146)
> (0.0000797)     (0.0000804)

currentratio       -0.0177         -0.0163        -0.00909        -0.00839
>     0.00472          0.00477
                  (0.0369)        (0.0366)        (0.0145)        (0.0145)
>   (0.00572)        (0.00569)

dummy_ESGAA                          -0.304                          -0.113
>                     -0.102***
                                    (0.256)                         (0.0788)
>                   (0.0227)

dummy_ESGBB                          -0.162                          -0.101**
>                    -0.0465**
                                    (0.120)                         (0.0472)
>                   (0.0182)

dummy_ESGCC                          -0.111                          -0.0507
>                    -0.0433***
                                    (0.108)                         (0.0463)
>                   (0.0147)
```

```
    _Iyear_2016
    >      0.0501***       0.0508***

    >    (0.0120)        (0.0120)

    _Iyear_2017
    >      0.0139          0.0135

    >    (0.0124)        (0.0125)

    _Iyear_2018
    >      0.0339***       0.0338***

    >    (0.0111)        (0.0112)

    _Iyear_2019
    >       0.128***        0.128***

    >    (0.0127)        (0.0127)

    _cons               0.348***        0.348***        0.155***        0.155***
    >       0.328***        0.330***
                       (0.127)         (0.126)         (0.0522)        (0.0520)
    >    (0.0211)        (0.0208)
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
    N                     803             803             785             785
    >         811             811
    R-sq                0.028           0.027           0.020           0.020
    >
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────────
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

423 .
424 . ** Graph
```

```
425 .
426 . twoway (qfit returns_rf esg if icbindustryname=="Consumer Discretionary", le
    > gend(label(1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Consumer Di
    > scretionary", legend(label(2 ESG Combined))), title("Consumer Discretionary:
    >  Excess Returns per ESG Score")

427 . graph export ConsumerDiscretionary.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/ConsumerDiscretionary.pdf written in PDF format)

428 .
429 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Consumer Discretionary"), t
    > itle("Consumer Discretionary: ESG & Excess Returns")
    > graph export ConsumerDiscretionary_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Consumer Discretionary"
    > ), title("Consumer Discretionary: ESG Combined & Excess Returns")
    > graph export ConsumerDiscretionary_ESGcomb.pdf,replace
    > */
430 .
431 . ////////////Regressions for Consumer Staples (7-8) D /////////////
    >
432 . //Fama-French 3 Factor
433 .
434 . ** ESG
435 .
436 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        250
                                                F(6, 243)         =       4.12
                                                Prob > F          =     0.0006
                                                R-squared         =     0.1068
                                                Root MSE          =     .25153

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8017214   .2079958     3.85   0.000     .3920166    1.211426
         SMB |  -1.739106   .9911917    -1.75   0.081     -3.69153    .2133177
         HML |   .6761025   .3079115     2.20   0.029     .0695863    1.282619
  dummy_ESGA |  -.1220597   .0561317    -2.17   0.031    -.2326266   -.0114928
  dummy_ESGB |  -.0708053   .0550797    -1.29   0.200    -.1792999    .0376893
  dummy_ESGC |   -.103005   .0627521    -1.64   0.102    -.2266125    .0206025
       _cons |   .0673198   .0571041     1.18   0.240    -.0451624     .179802
------------------------------------------------------------------------------
```

```
437 . estimates store r7_1

438 .
439 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       3.71
                                                    Prob > F          =     0.0015
                                                    R-squared         =     0.0998
                                                    Root MSE          =     .25251

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .7977307   .2077107     3.84   0.000     .3885875    1.206874
         SMB |  -1.844181   .9959848    -1.85   0.065    -3.806047    .1176843
         HML |   .7018322    .309061     2.27   0.024     .0930518    1.310613
  dummy_ESGB |   .0324047    .033963     0.95   0.341    -.0344946    .0993041
  dummy_ESGC |   .0006022   .0459042     0.01   0.990    -.0898187    .0910231
  dummy_ESGD |   .0939626   .0632349     1.49   0.139    -.0305959    .2185211
       _cons |  -.0369924   .0425761    -0.87   0.386    -.1208577    .0468728
------------------------------------------------------------------------------

440 . estimates store r8_1

441 .
442 . ** ESG combined
443 .
444 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       3.77
                                                    Prob > F          =     0.0013
                                                    R-squared         =     0.0994
                                                    Root MSE          =     .25257
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8019998	.2073745	3.87	0.000	.3935189	1.210481
SMB	-1.785792	.9973162	-1.79	0.075	-3.75028	.1786958
HML	.677078	.3106234	2.18	0.030	.06522	1.288936
dummy_ESGAA	-.0975015	.0601876	-1.62	0.107	-.2160575	.0210545
dummy_ESGBB	-.0735577	.0544859	-1.35	0.178	-.1808826	.0337673
dummy_ESGCC	-.0809141	.058431	-1.38	0.167	-.19601	.0341818
_cons	.0556333	.0567333	0.98	0.328	-.0561185	.167385

```
445 . estimates store r7_2

446 .
447 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       3.54
                                                    Prob > F          =     0.0022
                                                    R-squared         =     0.0945
                                                    Root MSE          =     .25326
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8038151	.2069378	3.88	0.000	.3961944	1.211436
SMB	-1.87349	1.000348	-1.87	0.062	-3.843949	.0969692
HML	.7020402	.3113322	2.25	0.025	.0887861	1.315294
dummy_ESGBB	-.0001946	.0405323	-0.00	0.996	-.0800341	.0796449
dummy_ESGCC	-.0070965	.0456836	-0.16	0.877	-.0970828	.0828898
dummy_ESGDD	.0625835	.0661624	0.95	0.345	-.0677415	.1929086
_cons	-.0190465	.0463435	-0.41	0.681	-.1103327	.0722398

```
448 . estimates store r8_2

449 .
450 . ** E
451 .
452 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       4.12
                                                    Prob > F          =     0.0006
                                                    R-squared         =     0.0949
                                                    Root MSE          =     .25321

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8114785   .2067491     3.92   0.000     .4042294    1.218728
         SMB |  -1.947106   1.001323    -1.94   0.053    -3.919486    .0252741
         HML |   .7266007   .3135782     2.32   0.021     .1089223    1.344279
    dummy_EA |   .0140265   .0467754     0.30   0.765    -.0781106    .1061636
    dummy_EB |  -.0335462   .0465053    -0.72   0.471    -.1251512    .0580587
    dummy_EC |  -.0286744    .054257    -0.53   0.598    -.1355485    .0781996
       _cons |  -.0065433    .044785    -0.15   0.884    -.0947596     .081673
------------------------------------------------------------------------------

453 . estimates store r7_3

454 .
455 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       4.29
                                                    Prob > F          =     0.0004
                                                    R-squared         =     0.0964
                                                    Root MSE          =     .25299
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8068437	.2063253	3.91	0.000	.4004294	1.213258
SMB	-1.896966	1.002739	-1.89	0.060	-3.872135	.0782031
HML	.7154462	.3134332	2.28	0.023	.0980535	1.332839
dummy_EB	-.0537076	.0378006	-1.42	0.157	-.1281662	.020751
dummy_EC	-.0489964	.047406	-1.03	0.302	-.1423755	.0443827
dummy_ED	-.0330692	.0479414	-0.69	0.491	-.1275029	.0613646
_cons	.01495	.0422269	0.35	0.724	-.0682276	.0981276

```
456 . estimates store r8_3

457 .
458 . ** S
459 .
460 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        250
                                                F(6, 243)         =       4.54
                                                Prob > F          =     0.0002
                                                R-squared         =     0.1088
                                                Root MSE          =     .25125
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8073956	.2051044	3.94	0.000	.4033862	1.211405
SMB	-1.816249	.9825634	-1.85	0.066	-3.751677	.1191794
HML	.698036	.3068266	2.28	0.024	.0936569	1.302415
dummy_SA	-.0950961	.0603098	-1.58	0.116	-.2138928	.0237005
dummy_SB	-.0963802	.0628614	-1.53	0.127	-.220203	.0274425
dummy_SC	-.129868	.0663471	-1.96	0.051	-.2605568	.0008207
_cons	.0799946	.0651814	1.23	0.221	-.048398	.2083873

```
461 . estimates store r7_4

462 .
463 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       4.41
                                                    Prob > F          =     0.0003
                                                    R-squared         =     0.1048
                                                    Root MSE          =     .25181

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .8043932   .2047864     3.93   0.000     .4010103    1.207776
         SMB |  -1.897698   .9830783    -1.93   0.055     -3.83414    .0387445
         HML |    .718909   .3060886     2.35   0.020     .1159836    1.321835
    dummy_SB |   -.010606   .0342392    -0.31   0.757    -.0780496    .0568376
    dummy_SC |   -.044039   .0412307    -1.07   0.287    -.1252541    .0371761
    dummy_SD |   .0804635   .0704536     1.14   0.255    -.0583141    .2192412
       _cons |   -.006506   .0390499    -0.17   0.868    -.0834255    .0704135
------------------------------------------------------------------------------

464 . estimates store r8_4

465 .
466 . ** S
467 .
468 .
469 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       4.01
                                                    Prob > F          =     0.0008
                                                    R-squared         =     0.1036
                                                    Root MSE          =     .25199
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8178368	.2079938	3.93	0.000	.408136	1.227538
SMB	-1.827522	1.001706	-1.82	0.069	-3.800658	.145613
HML	.6840894	.3111554	2.20	0.029	.0711834	1.296995
dummy_GA	-.095306	.0542929	-1.76	0.080	-.2022508	.0116387
dummy_GB	-.0593125	.0534213	-1.11	0.268	-.1645403	.0459153
dummy_GC	-.0298129	.0548252	-0.54	0.587	-.1378062	.0781805
_cons	.0378344	.0553351	0.68	0.495	-.0711634	.1468321

```
470 . estimates store r7_5

471 .
472 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        250
                                                    F(6, 243)         =       3.76
                                                    Prob > F          =     0.0013
                                                    R-squared         =     0.0974
                                                    Root MSE          =     .25286
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.8164356	.2079169	3.93	0.000	.4068862	1.225985
SMB	-1.933776	1.004091	-1.93	0.055	-3.911609	.0440576
HML	.7110087	.3121109	2.28	0.024	.0962208	1.325797
dummy_GB	.0234513	.0398078	0.59	0.556	-.0549612	.1018637
dummy_GC	.053316	.0412953	1.29	0.198	-.0280264	.1346584
dummy_GD	.0705506	.0578245	1.22	0.224	-.0433506	.1844519
_cons	-.0462361	.0436877	-1.06	0.291	-.1322909	.0398188

```
473 . estimates store r8_5

474 .
475 . ** Final
476 .
477 . esttab r7_1 r7_2 r7_3 r7_4 r7_5 using FF_Estimations.rtf, r2 se star(* 0.10
    > ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

478 . esttab r7_1 r7_2 r7_3 r7_4 r7_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
                          (1)             (2)             (3)             (4)
    >         (5)
                   returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
    mktrf               0.802***        0.802***        0.811***        0.807***
    >       0.818***
                       (0.208)         (0.207)         (0.207)         (0.205)
    >     (0.208)

    SMB                -1.739*         -1.786*         -1.947*         -1.816*
    >      -1.828*
                       (0.991)         (0.997)         (1.001)         (0.983)
    >     (1.002)

    HML                 0.676**         0.677**         0.727**         0.698**
    >       0.684**
                       (0.308)         (0.311)         (0.314)         (0.307)
    >     (0.311)

    dummy_ESGA         -0.122**
    >
                      (0.0561)
    >

    dummy_ESGB          -0.0708
    >
                      (0.0551)
    >

    dummy_ESGC          -0.103
    >
                      (0.0628)
    >
```

dummy_ESGAA	-0.0975			
	(0.0602)			
dummy_ESGBB	-0.0736			
	(0.0545)			
dummy_ESGCC	-0.0809			
	(0.0584)			
dummy_EA		0.0140		
		(0.0468)		
dummy_EB		-0.0335		
		(0.0465)		
dummy_EC		-0.0287		
		(0.0543)		
dummy_SA			-0.0951	
			(0.0603)	
dummy_SB			-0.0964	
			(0.0629)	
dummy_SC			-0.130*	
			(0.0663)	

```
dummy_GA
>     -0.0953*

>    (0.0543)

dummy_GB
>     -0.0593

>    (0.0534)

dummy_GC
>     -0.0298

>    (0.0548)

_cons              0.0673          0.0556        -0.00654          0.0800
>      0.0378
                  (0.0571)        (0.0567)        (0.0448)        (0.0652)
>    (0.0553)
─────────────────────────────────────────────────────────────────────────────
> ──────────────
N                     250             250             250             250
>         250
R-sq                0.107           0.099           0.095           0.109
>       0.104
─────────────────────────────────────────────────────────────────────────────
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

479 . esttab r8_1 r8_2 r8_3 r8_4 r8_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

─────────────────────────────────────────────────────────────────────────────
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
─────────────────────────────────────────────────────────────────────────────
> ──────────────
mktrf             0.798***        0.804***        0.807***        0.804***
>       0.816***
                  (0.208)         (0.207)         (0.206)         (0.205)
>     (0.208)
```

```
SMB                -1.844*         -1.873*         -1.897*         -1.898*
>      -1.934*
                   (0.996)         (1.000)         (1.003)         (0.983)
>      (1.004)

HML                 0.702**         0.702**         0.715**         0.719**
>       0.711**
                   (0.309)         (0.311)         (0.313)         (0.306)
>      (0.312)

dummy_ESGB          0.0324
>
                  (0.0340)
>

dummy_ESGC        0.000602
>
                  (0.0459)
>

dummy_ESGD          0.0940
>
                  (0.0632)
>

dummy_ESGBB                      -0.000195
>
                                  (0.0405)
>

dummy_ESGCC                       -0.00710
>
                                  (0.0457)
>

dummy_ESGDD                         0.0626
>
                                  (0.0662)
>

dummy_EB                                            -0.0537
>
                                                   (0.0378)
>
```

dummy_EC		-0.0490	
>			
		(0.0474)	
>			
dummy_ED		-0.0331	
>			
		(0.0479)	
>			
dummy_SB			-0.0106
>			
			(0.0342)
>			
dummy_SC			-0.0440
>			
			(0.0412)
>			
dummy_SD			0.0805
>			
			(0.0705)
>			
dummy_GB			
>	0.0235		
>	(0.0398)		
dummy_GC			
>	0.0533		
>	(0.0413)		
dummy_GD			
>	0.0706		
>	(0.0578)		

```
_cons             -0.0370         -0.0190          0.0150         -0.00651
>     -0.0462
                 (0.0426)        (0.0463)        (0.0422)        (0.0390)
>    (0.0437)
------------------------------------------------------------------------------
> ─────────────
N                      250             250             250             250
>         250
R-sq                 0.100           0.094           0.096           0.105
>       0.097
------------------------------------------------------------------------------
> ─────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

480 .
481 . //Sharpe Ratio
482 .
483 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
> ershare currentratio if icbindustryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        227
                                                F(7, 219)         =       2.19
                                                Prob > F          =     0.0360
                                                R-squared         =     0.0523
                                                Root MSE          =     1.0907

------------------------------------------------------------------------------
> ─────
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ─────
    dummy_ESGA |  -.2116338   .2802917    -0.76   0.451    -.7640482    .3407
> 806
    dummy_ESGB |   .0395605   .2423848     0.16   0.871    -.4381449    .5172
> 659
    dummy_ESGC |  -.1928255    .233544    -0.83   0.410    -.6531071     .267
> 456
       mktcap |   3.07e-06   1.64e-06     1.87   0.063    -1.65e-07    6.30e
> -06
      debtequ |   .0051473   .0039757     1.29   0.197    -.0026883    .0129
> 829
revenuepershare |  -.0008243   .0003508    -2.35   0.020    -.0015156    -.000
> 133
  currentratio |   .0701327   .0791171     0.89   0.376    -.0857957     .226
> 061
         _cons |   .3575283   .2858722     1.25   0.212    -.2058845    .9209
```

```
> 411
-------------+------------------------------------------------------------------
> ----

484 . estimates store rd_1

485 .
486 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
> uepershare currentratio if icbindustryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        227
                                                F(7, 219)         =       1.83
                                                Prob > F          =     0.0818
                                                R-squared         =     0.0445
                                                Root MSE          =     1.0952

-------------+------------------------------------------------------------------
> ----
             |               Robust
SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+------------------------------------------------------------------
> ----
  dummy_ESGAA |  -.0982878   .3091473    -0.32   0.751    -.7075723    .5109
> 968
  dummy_ESGBB |   .0092397   .2359759     0.04   0.969    -.4558346    .4743
> 141
  dummy_ESGCC |  -.1125682   .2201838    -0.51   0.610    -.5465186    .3213
> 821
       mktcap |   3.30e-06   1.54e-06     2.14   0.034     2.60e-07    6.34e
> -06
      debtequ |   .0040906   .0036303     1.13   0.261    -.0030641    .0112
> 454
revenuepershare |  -.0008011   .0003652    -2.19   0.029    -.0015208   -.0000
> 814
 currentratio |   .0706427   .0764926     0.92   0.357    -.0801132    .2213
> 985
       _cons |   .3289555    .275814     1.19   0.234     -.214634    .8725
> 451
-------------+------------------------------------------------------------------
> ----
```

```
487 . estimates store rd_2

488 .
489 . ** STD regression
490 .
491 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Consumer Staples", vce(rob
    > ust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =       231
    Group variable: ric                             Number of groups  =        50

    R-sq:                                           Obs per group:
         within  = 0.1103                                         min =         1
         between = 0.3704                                         avg =       4.6
         overall = 0.2356                                         max =         5

                                                    Wald chi2(11)     =     60.10
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 50 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ---
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ---
        _Iyear_2016 |   .0140969   .0189683     0.74   0.457    -.0230803     .051
    > 274
        _Iyear_2017 |   .0088495   .0147951     0.60   0.550    -.0201483     .0378
    > 474
        _Iyear_2018 |    .052363   .0183815     2.85   0.004     .016336     .0883
    > 901
        _Iyear_2019 |   .0826687   .0188279     4.39   0.000     .0457668     .1195
    > 706
         dummy_ESGA |  -.0482404   .0242118    -1.99   0.046    -.0956947    -.0007
    > 861
         dummy_ESGB |  -.0275776   .0244277    -1.13   0.259    -.0754551     .0202
    > 998
         dummy_ESGC |   .0218767   .0254933     0.86   0.391    -.0280892     .0718
    > 427
             mktcap |  -6.55e-07   1.43e-07    -4.58   0.000    -9.36e-07    -3.75e
    > -07
            debtequ |  -.0003656   .0003075    -1.19   0.234    -.0009682     .000
    > 237
    revenuepershare |   .0001204   .0000868     1.39   0.165    -.0000497     .0002
```

```
> 904
   currentratio |  -.0059505    .008951    -0.66   0.506    -.0234941    .0115
> 932
          _cons |   .2513919   .0272005     9.24   0.000     .1980798    .3047
> 039
-------------------+------------------------------------------------------------
> ---
        sigma_u |  .05734919
        sigma_e |  .08682693
            rho |  .30374737   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ---

492 . estimates store rd_3

493 .
494 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Consumer Staples", vce(
> robust)
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =       231
Group variable: ric                             Number of groups  =        50

R-sq:                                           Obs per group:
     within  = 0.1113                                         min =         1
     between = 0.3734                                         avg =       4.6
     overall = 0.2438                                         max =         5

                                                Wald chi2(11)     =     57.75
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                    (Std. Err. adjusted for 50 clusters in r
> ic)
-------------------+------------------------------------------------------------
> ---
                   |               Robust
     sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
-------------------+------------------------------------------------------------
> ---
    _Iyear_2016 |   .0152911   .0185277     0.83   0.409    -.0210226    .0516
> 048
    _Iyear_2017 |   .0076858   .0151252     0.51   0.611     -.021959    .0373
> 306
    _Iyear_2018 |   .0536391   .0187735     2.86   0.004     .0168436    .0904
> 345
    _Iyear_2019 |   .0765462   .0192623     3.97   0.000     .0387928    .1142
> 995
```

```
    dummy_ESGAA |  -.0473364   .0266993    -1.77   0.076     -.099666    .0049
> 932
    dummy_ESGBB |  -.0342079   .0238765    -1.43   0.152     -.081005    .0125
> 892
    dummy_ESGCC |   .0086501   .0245235     0.35   0.724    -.0394152    .0567
> 154
         mktcap |  -7.02e-07   1.44e-07    -4.86   0.000    -9.85e-07   -4.19e
> -07
        debtequ |  -.0003083   .0003054    -1.01   0.313    -.0009069    .0002
> 902
revenuepershare |   .0001142   .0000858     1.33   0.184    -.0000541    .0002
> 824
   currentratio |  -.0041372   .0082738    -0.50   0.617    -.0203536    .0120
> 792
          _cons |   .2533094   .0259607     9.76   0.000     .2024274    .3041
> 915
------------------+------------------------------------------------------------
> ———
        sigma_u |  .05340596
        sigma_e |  .08670997
            rho |  .27502141   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ———
```

```
495 . estimates store rd_4

496 .
497 . ** Average returns-rf
498 .
499 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Consumer Staples", vce(robust)

    Linear regression                               Number of obs     =        227
                                                    F(7, 219)         =       1.78
                                                    Prob > F          =     0.0922
                                                    R-squared         =     0.0417
                                                    Root MSE          =     .25932
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.0664899   .0719465    -0.92   0.356     -.208286    .0753
> 062
  dummy_ESGB |  -.0210899   .0671256    -0.31   0.754    -.1533847     .111
> 205
  dummy_ESGC |  -.0752985   .0659068    -1.14   0.254    -.2051912    .0545
> 942
      mktcap |   2.79e-07   2.65e-07     1.05   0.294    -2.44e-07    8.01e
> -07
     debtequ |   .0009925   .0007204     1.38   0.170    -.0004274    .0024
> 123
revenuepersh~e |  -.0002114   .0000986    -2.14   0.033    -.0004057   -.0000
> 171
  currentrati~o |   .0123002    .016769     0.73   0.464    -.0207491    .0453
> 495
       _cons |   .1084036   .0770318     1.41   0.161    -.0434149     .260
> 222
------------------------------------------------------------------------------
> ----

500 . estimates store rd_5

501 .
502 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        227
                                                F(7, 219)         =       1.36
                                                Prob > F          =     0.2243
                                                R-squared         =     0.0335
                                                Root MSE          =     .26042
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
 dummy_ESGAA |  -.0557443   .0762244    -0.73   0.465    -.2059717    .0944
> 831
 dummy_ESGBB |  -.0322941   .0649437    -0.50   0.620    -.1602887    .0957
> 005
 dummy_ESGCC |  -.0472935   .0630962    -0.75   0.454    -.1716471      .07
> 706
      mktcap |   3.52e-07   2.51e-07     1.40   0.164    -1.44e-07    8.47e
> -07
     debtequ |   .0007271   .0006955     1.05   0.297    -.0006435    .0020
> 978
revenuepershare |  -.0002078   .0001009    -2.06   0.041    -.0004067   -8.98e
> -06
currentratio |   .0100698     .01622     0.62   0.535    -.0218974    .0420
> 371
       _cons |   .1062752   .0744305     1.43   0.155    -.0404166    .2529
> 671
------------------------------------------------------------------------------
> ----

503 . estimates store rd_6

504 .
505 . **Treynor Ratio
506 .
507 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        225
                                                F(7, 217)         =       2.35
                                                Prob > F          =     0.0250
                                                R-squared         =     0.0331
                                                Root MSE          =     .50302
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.0728337   .1307936    -0.56   0.578    -.3306222    .1849
> 547
  dummy_ESGB |   .0146718   .1137175     0.13   0.897    -.2094604    .2388
> 039
  dummy_ESGC |  -.1220985   .1192536    -1.02   0.307    -.3571423    .1129
> 452
      mktcap |   4.46e-07   6.16e-07     0.72   0.470    -7.68e-07    1.66e
> -06
    debtequ |   .0006607   .0011349     0.58   0.561    -.0015762    .0028
> 976
revenuepershare |  -.0003415   .0001097    -3.11   0.002    -.0005576   -.0001
> 253
 currentratio |   .0168711   .0300866     0.56   0.576    -.0424284    .0761
> 705
       _cons |   .2106843   .1201738     1.75   0.081    -.0261731    .4475
> 417
------------------------------------------------------------------------------
> ----

508 . estimates store rd_7

509 .
510 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
> nuepershare currentratio if icbindustryname=="Consumer Staples", vce(robust)

Linear regression                               Number of obs     =        225
                                                F(7, 217)         =       1.77
                                                Prob > F          =     0.0936
                                                R-squared         =     0.0222
                                                Root MSE          =     .50584
```

```
------------------------------------------------------------------------------
> ----
             TreynorRatio |      Coef.   Robust Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------------------------------------------------------------------------
> ----
              dummy_ESGAA |  -.0548163   .1482817    -0.37   0.712     -.347073    .2374
> 404
              dummy_ESGBB |  -.0222345   .1076638    -0.21   0.837    -.2344352    .1899
> 662
              dummy_ESGCC |  -.0672234   .1147631    -0.59   0.559    -.2934165    .1589
> 697
                   mktcap |   6.43e-07   5.66e-07     1.14   0.257    -4.72e-07    1.76e
> -06
                 debtequ |   .0000285   .0011432     0.02   0.980    -.0022247    .0022
> 817
          revenuepershare |  -.0003295   .0001144    -2.88   0.004    -.0005549    -.000
> 104
             currentratio |   .0104379   .0294089     0.35   0.723    -.0475258    .0684
> 016
                    _cons |   .2173932   .1161628     1.87   0.063    -.0115586     .446
> 345
------------------------------------------------------------------------------
> ----
```

```
511 . estimates store rd_8

512 .
513 . esttab rd_1 rd_2 rd_7 rd_8 rd_3 rd_4 using SR_Estimations.rtf, r2 se star(*
> 0.10 ** 0.05 *** 0.01) append modelwidth(6)
(output written to SR_Estimations.rtf)

514 . esttab rd_1 rd_2 rd_7 rd_8 rd_3 rd_4, r2 se star(* 0.10 ** 0.05 *** 0.01)
```

```
------------------------------------------------------------------------------------------
> ------------------------------
                      (1)             (2)             (3)             (4)
>         (5)             (6)
              SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
>  sd_returns      sd_returns
------------------------------------------------------------------------------------------
> ------------------------------
dummy_ESGA          -0.212                          -0.0728
>     -0.0482**
                   (0.280)                         (0.131)
>    (0.0242)
```

```
dummy_ESGB          0.0396                          0.0147
>     -0.0276
                   (0.242)                         (0.114)
>    (0.0244)

dummy_ESGC          -0.193                          -0.122
>      0.0219
                   (0.234)                         (0.119)
>    (0.0255)

mktcap          0.00000307*     0.00000330**   0.000000446     0.000000643    -
> 0.000000655*** -0.000000702***
              (0.00000164)    (0.00000154)    (0.000000616)    (0.000000566)
>  (0.000000143)    (0.000000144)

debtequ            0.00515         0.00409        0.000661       0.0000285
>   -0.000366       -0.000308
                 (0.00398)       (0.00363)       (0.00113)       (0.00114)
>  (0.000307)      (0.000305)

revenueper~e    -0.000824**     -0.000801**     -0.000341***    -0.000329***
>    0.000120        0.000114
                (0.000351)      (0.000365)      (0.000110)      (0.000114)
> (0.0000868)     (0.0000858)

currentratio       0.0701          0.0706          0.0169          0.0104
>    -0.00595        -0.00414
                  (0.0791)        (0.0765)        (0.0301)        (0.0294)
>   (0.00895)       (0.00827)

dummy_ESGAA                        -0.0983                         -0.0548
>                    -0.0473*
                                   (0.309)                         (0.148)
>                   (0.0267)

dummy_ESGBB                        0.00924                         -0.0222
>                    -0.0342
                                   (0.236)                         (0.108)
>                   (0.0239)

dummy_ESGCC                         -0.113                         -0.0672
>                    0.00865
                                   (0.220)                         (0.115)
>                   (0.0245)
```

```
    _Iyear_2016
>      0.0141          0.0153

>    (0.0190)        (0.0185)

    _Iyear_2017
>     0.00885         0.00769

>    (0.0148)        (0.0151)

    _Iyear_2018
>      0.0524***       0.0536***

>    (0.0184)        (0.0188)

    _Iyear_2019
>      0.0827***       0.0765***

>    (0.0188)        (0.0193)

    _cons               0.358           0.329           0.211*          0.217*
>       0.251***        0.253***
                    (0.286)         (0.276)         (0.120)         (0.116)
>    (0.0272)        (0.0260)
------------------------------------------------------------------------------
> ----------------------------
    N                     227             227             225             225
>         231             231
    R-sq                0.052           0.044           0.033           0.022
>
------------------------------------------------------------------------------
> ----------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

515 .
516 . ** Graph
```

```
517 .
518 . twoway (qfit returns_rf esg if icbindustryname=="Consumer Staples", legend(l
    > abel(1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Consumer Staples"
    > , legend(label(2 ESG Combined))), title("Consumer Staples: Excess Returns pe
    > r ESG Score")

519 . graph export ConsumerStaples.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/ConsumerStaples.pdf written in PDF format)

520 .
521 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Consumer Staples"), title("
    > Consumer Staples: ESG & Excess Returns")
    > graph export ConsumerStaple_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Consumer Staples"), tit
    > le("Consumer Staples: ESG Combined & Excess Returns")
    > graph export ConsumerStaple_ESGcomb.pdf,replace
    > */
522 .
523 . ////////////Regressions for Energy (9-10) E //////////////
    >
524 . //Fama-French 3 Factor
525 .
526 . ** ESG
527 .
528 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      34.77
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3979
                                                    Root MSE          =     .31971

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .6600714   .2105463     3.14   0.002     .2460238    1.074119
         SMB |   3.343405   1.060217     3.15   0.002     1.258447    5.428362
         HML |   .4739292   .3162083     1.50   0.135    -.1479068    1.095765
   dummy_ESGA |   .0188196    .049725     0.38   0.705    -.0789665    .1166057
   dummy_ESGB |  -.0295094   .0483913    -0.61   0.542    -.1246728     .065654
   dummy_ESGC |   -.051448   .0404578    -1.27   0.204    -.1310098    .0281138
        _cons |   .0397273   .0431322     0.92   0.358    -.0450939    .1245486
------------------------------------------------------------------------------
```

```
529 . estimates store r9_1

530 .
531 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      35.09
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3978
                                                    Root MSE          =     .31974

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .6621047   .2111293     3.14   0.002     .2469109    1.077299
         SMB |   3.323275   1.063308     3.13   0.002     1.232238    5.414311
         HML |   .4780004   .3172601     1.51   0.133     -.145904    1.101905
   dummy_ESGB |  -.0285152   .0566058    -0.50   0.615    -.1398328    .0828024
   dummy_ESGC |  -.0504602   .0489839    -1.03   0.304    -.1467889    .0458686
   dummy_ESGD |   .0056652   .0515161     0.11   0.912    -.0956432    .1069737
        _cons |   .0382208   .0538545     0.71   0.478    -.0676861    .1441277
------------------------------------------------------------------------------

532 . estimates store r10_1

533 .
534 . ** ESG combined
535 .
536 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      34.45
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3980
                                                    Root MSE          =     .31969
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.6616977	.2101355	3.15	0.002	.2484581	1.074937
SMB	3.323249	1.058347	3.14	0.002	1.241969	5.404528
HML	.4862815	.316154	1.54	0.125	-.1354476	1.108011
dummy_ESGAA	.0385995	.065952	0.59	0.559	-.0910977	.1682966
dummy_ESGBB	-.0249315	.0461958	-0.54	0.590	-.1157773	.0659143
dummy_ESGCC	-.050276	.0396684	-1.27	0.206	-.1282855	.0277334
_cons	.0395831	.0427392	0.93	0.355	-.0444651	.1236314

```
537 . estimates store r9_2

538 .
539 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        369
                                                F(6, 362)         =      34.60
                                                Prob > F          =     0.0000
                                                R-squared         =     0.3977
                                                Root MSE          =     .31978
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.6625833	.2109672	3.14	0.002	.2477081	1.077459
SMB	3.312341	1.061314	3.12	0.002	1.225225	5.399457
HML	.4833948	.3162231	1.53	0.127	-.1384702	1.10526
dummy_ESGBB	-.0259844	.0671902	-0.39	0.699	-.1581165	.1061477
dummy_ESGCC	-.0512549	.0621398	-0.82	0.410	-.1734553	.0709454
dummy_ESGDD	.0036646	.0642614	0.06	0.955	-.122708	.1300371
_cons	.0400319	.0671789	0.60	0.552	-.092078	.1721419

```
540 . estimates store r10_2

541 .
542 . ** E
543 .
544 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      34.29
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3962
                                                    Root MSE          =     .32017

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .6648284   .2114768     3.14   0.002      .248951    1.080706
         SMB |   3.252059   1.072075     3.03   0.003     1.143783    5.360335
         HML |   .4952897   .3217833     1.54   0.125    -.1375097    1.128089
    dummy_EA |   .0074951   .0462389     0.16   0.871    -.0834354    .0984256
    dummy_EB |  -.0095231   .0467549    -0.20   0.839    -.1014684    .0824223
    dummy_EC |  -.0436014   .0451642    -0.97   0.335    -.1324187    .0452158
       _cons |   .0237349   .0391579     0.61   0.545    -.0532707    .1007405
------------------------------------------------------------------------------

545 . estimates store r9_3

546 .
547 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      33.99
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3961
                                                    Root MSE          =     .32019
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.664882	.2117561	3.14	0.002	.2484555	1.081309
SMB	3.253987	1.083777	3.00	0.003	1.122697	5.385277
HML	.494986	.3240404	1.53	0.127	-.142252	1.132224
dummy_EB	-.0107955	.0551924	-0.20	0.845	-.1193334	.0977425
dummy_EC	-.0448678	.0529058	-0.85	0.397	-.1489091	.0591734
dummy_ED	.001549	.0451656	0.03	0.973	-.087271	.090369
_cons	.0250305	.0531788	0.47	0.638	-.0795476	.1296086

```
548 . estimates store r10_3

549 .
550 . ** S
551 .
552 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Energy", vce(robust)

Linear regression                               Number of obs     =        369
                                                F(6, 362)         =      35.27
                                                Prob > F          =     0.0000
                                                R-squared         =     0.3962
                                                Root MSE          =     .32017
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.6360581	.2103695	3.02	0.003	.2223583	1.049758
SMB	3.361163	1.064283	3.16	0.002	1.268209	5.454118
HML	.4682264	.3181271	1.47	0.142	-.1573828	1.093836
dummy_SA	.0551106	.0493937	1.12	0.265	-.042024	.1522451
dummy_SB	-.0030534	.0446497	-0.07	0.946	-.0908588	.084752
dummy_SC	-.0185261	.0399318	-0.46	0.643	-.0970535	.0600012
_cons	.0221365	.0424043	0.52	0.602	-.0612531	.1055261

```
553 . estimates store r9_4

554 .
555 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      35.76
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3954
                                                    Root MSE          =     .32038

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .6405236   .2113597     3.03   0.003     .2248766    1.056171
         SMB |   3.384983   1.066926     3.17   0.002     1.286831    5.483135
         HML |   .4609602   .3190303     1.44   0.149    -.1664253    1.088346
    dummy_SB |  -.0332046    .054726    -0.61   0.544    -.1408254    .0744163
    dummy_SC |  -.0486196   .0501267    -0.97   0.333    -.1471956    .0499565
    dummy_SD |  -.0273894   .0510453    -0.54   0.592    -.1277718    .0729931
       _cons |   .0519552   .0550805     0.94   0.346    -.0563627     .160273
------------------------------------------------------------------------------

556 . estimates store r10_4

557 .
558 . ** G
559 .
560 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      33.82
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3969
                                                    Root MSE          =     .31998
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.6410364	.209912	3.05	0.002	.2282363	1.053836
SMB	3.352019	1.066853	3.14	0.002	1.254012	5.450027
HML	.4599683	.3172682	1.45	0.148	-.1639518	1.083888
dummy_GA	-.0560467	.0591496	-0.95	0.344	-.1723668	.0602733
dummy_GB	-.0244099	.0558483	-0.44	0.662	-.1342378	.085418
dummy_GC	-.0585106	.0572226	-1.02	0.307	-.171041	.0540198
_cons	.0541088	.0617002	0.88	0.381	-.0672271	.1754446

```
561 . estimates store r9_5

562 .
563 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Energy", vce(robust)

    Linear regression                               Number of obs     =        369
                                                    F(6, 362)         =      33.91
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3979
                                                    Root MSE          =     .31971
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.6429049	.2097901	3.06	0.002	.2303446	1.055465
SMB	3.256449	1.058307	3.08	0.002	1.175247	5.33765
HML	.4830592	.3158061	1.53	0.127	-.1379858	1.104104
dummy_GB	.0341322	.0428764	0.80	0.427	-.050186	.1184503
dummy_GC	-.0001981	.045402	-0.00	0.997	-.0894829	.0890867
dummy_GD	.0751599	.0622621	1.21	0.228	-.047281	.1976007
_cons	-.0056684	.0478344	-0.12	0.906	-.0997366	.0883998

```
564 . estimates store r10_5

565 .
566 . ** Final
567 .
568 . esttab r9_1 r9_2 r9_3 r9_4 r9_5 using FF_Estimations.rtf, r2 se star(* 0.10
    > ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

569 . esttab r9_1 r9_2 r9_3 r9_4 r9_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
                          (1)             (2)             (3)             (4)
    >         (5)
                   returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────
    mktrf               0.660***        0.662***        0.665***        0.636***
    >       0.641***
                       (0.211)         (0.210)         (0.211)         (0.210)
    >     (0.210)

    SMB                 3.343***        3.323***        3.252***        3.361***
    >       3.352***
                       (1.060)         (1.058)         (1.072)         (1.064)
    >     (1.067)

    HML                 0.474           0.486           0.495           0.468
    >       0.460
                       (0.316)         (0.316)         (0.322)         (0.318)
    >     (0.317)

    dummy_ESGA          0.0188
    >
                      (0.0497)
    >

    dummy_ESGB         -0.0295
    >
                      (0.0484)
    >

    dummy_ESGC         -0.0514
    >
                      (0.0405)
    >
```

dummy_ESGAA	0.0386			
	(0.0660)			
dummy_ESGBB	-0.0249			
	(0.0462)			
dummy_ESGCC	-0.0503			
	(0.0397)			
dummy_EA		0.00750		
		(0.0462)		
dummy_EB		-0.00952		
		(0.0468)		
dummy_EC		-0.0436		
		(0.0452)		
dummy_SA			0.0551	
			(0.0494)	
dummy_SB			-0.00305	
			(0.0446)	
dummy_SC			-0.0185	
			(0.0399)	

```
dummy_GA
>     -0.0560

>    (0.0591)

dummy_GB
>     -0.0244

>    (0.0558)

dummy_GC
>     -0.0585

>    (0.0572)

_cons              0.0397          0.0396          0.0237          0.0221
>      0.0541
                  (0.0431)        (0.0427)        (0.0392)        (0.0424)
>    (0.0617)
──────────────────────────────────────────────────────────────────────────────
> ──────────────
N                     369             369             369             369
>         369
R-sq                0.398           0.398           0.396           0.396
>       0.397
──────────────────────────────────────────────────────────────────────────────
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

570 . esttab r10_1 r10_2 r10_3 r10_4 r10_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

──────────────────────────────────────────────────────────────────────────────
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
──────────────────────────────────────────────────────────────────────────────
> ──────────────
mktrf              0.662***        0.663***        0.665***        0.641***
>       0.643***
                  (0.211)         (0.211)         (0.212)         (0.211)
>     (0.210)
```

SMB	3.323***	3.312***	3.254***	3.385***
>	3.256***			
	(1.063)	(1.061)	(1.084)	(1.067)
>	(1.058)			
HML	0.478	0.483	0.495	0.461
>	0.483			
	(0.317)	(0.316)	(0.324)	(0.319)
>	(0.316)			
dummy_ESGB	-0.0285			
>				
	(0.0566)			
>				
dummy_ESGC	-0.0505			
>				
	(0.0490)			
>				
dummy_ESGD	0.00567			
>				
	(0.0515)			
>				
dummy_ESGBB		-0.0260		
>				
		(0.0672)		
>				
dummy_ESGCC		-0.0513		
>				
		(0.0621)		
>				
dummy_ESGDD		0.00366		
>				
		(0.0643)		
>				
dummy_EB			-0.0108	
>				
			(0.0552)	
>				

dummy_EC		-0.0449	
		(0.0529)	
dummy_ED		0.00155	
		(0.0452)	
dummy_SB			-0.0332
			(0.0547)
dummy_SC			-0.0486
			(0.0501)
dummy_SD			-0.0274
			(0.0510)
dummy_GB	0.0341		
	(0.0429)		
dummy_GC	-0.000198		
	(0.0454)		
dummy_GD	0.0752		
	(0.0623)		

```
_cons              0.0382          0.0400          0.0250          0.0520
>    -0.00567
                  (0.0539)        (0.0672)        (0.0532)        (0.0551)
>    (0.0478)
------------------------------------------------------------------------------
> ─────────────
N                     369             369             369             369
>         369
R-sq                0.398           0.398           0.396           0.395
>       0.398
------------------------------------------------------------------------------
> ─────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

571 .
572 . //Sharpe Ratio
573 .
574 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
> ershare currentratio if icbindustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        357
                                                F(7, 349)         =       0.95
                                                Prob > F          =     0.4649
                                                R-squared         =     0.0247
                                                Root MSE          =     .97878

------------------------------------------------------------------------------
> ──┬──
                  │               Robust
    SharpeRatio   │      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
------------------┼------------------------------------------------------------
> ──┼──
     dummy_ESGA   │  -.2656525   .2362038    -1.12   0.261    -.7302144    .1989
> 095
     dummy_ESGB   │  -.0391868   .1544315    -0.25   0.800    -.3429203    .2645
> 467
     dummy_ESGC   │  -.0640016   .1248323    -0.51   0.608    -.3095198    .1815
> 165
         mktcap   │   3.06e-06   1.36e-06     2.25   0.025     3.86e-07    5.74e
> -06
        debtequ   │   .0277221   .0294839     0.94   0.348    -.0302663    .0857
> 105
revenuepershare   │   .0002234   .0005806     0.38   0.701    -.0009185    .0013
> 654
   currentratio   │   .0159591   .0320685     0.50   0.619    -.0471127    .0790
> 309
          _cons   │   -.192453    .134384    -1.43   0.153    -.4567574    .0718
```

```
> 514
-------------+------------------------------------------------------------------
> ----

575 . estimates store re_1

576 .
577 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
> uepershare currentratio if icbindustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        357
                                                F(7, 349)         =       0.95
                                                Prob > F          =     0.4658
                                                R-squared         =     0.0241
                                                Root MSE          =     .97908

-------------+------------------------------------------------------------------
> ----
             |               Robust
SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+------------------------------------------------------------------
> ----
  dummy_ESGAA |  -.2709505   .2556922    -1.06   0.290     -.773842     .231
> 941
  dummy_ESGBB |  -.0738022   .1512158    -0.49   0.626    -.3712111    .2236
> 067
  dummy_ESGCC |  -.0694559   .1248565    -0.56   0.578    -.3150217    .1761
> 099
       mktcap |   2.60e-06   1.23e-06     2.12   0.035     1.86e-07    5.01e
> -06
      debtequ |   .0282675    .029451     0.96   0.338    -.0296562    .0861
> 911
revenuepershare |   .0002358   .0005826     0.40   0.686      -.00091    .0013
> 815
 currentratio |   .0145482   .0318905     0.46   0.649    -.0481735    .0772
> 698
        _cons |  -.1806187   .1334281    -1.35   0.177     -.443043    .0818
> 056
-------------+------------------------------------------------------------------
> ----
```

```
578 . estimates store re_2

579 .
580 . ** STD regression
581 .
582 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Energy", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =        359
    Group variable: ric                             Number of groups  =         75

    R-sq:                                           Obs per group:
         within  = 0.2681                                         min =          2
         between = 0.2511                                         avg =        4.8
         overall = 0.2618                                         max =          5

                                                    Wald chi2(11)     =     114.67
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 75 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .1012548   .0196448     5.15   0.000     .0627517    .1397
    > 579
        _Iyear_2017 |  -.0487871   .0183092    -2.66   0.008    -.0846724   -.0129
    > 018
        _Iyear_2018 |   -.003935   .0165108    -0.24   0.812    -.0362955    .0284
    > 255
        _Iyear_2019 |   .0653194   .0189428     3.45   0.001     .0281922    .1024
    > 465
         dummy_ESGA |  -.0244143   .0313758    -0.78   0.436    -.0859097    .0370
    > 811
         dummy_ESGB |  -.0419604   .0327707    -1.28   0.200    -.1061897    .0222
    > 689
         dummy_ESGC |  -.0095843   .0198522    -0.48   0.629    -.0484939    .0293
    > 252
             mktcap |  -1.28e-06   3.83e-07    -3.35   0.001    -2.03e-06   -5.33e
    > -07
            debtequ |   .0034252    .002613     1.31   0.190    -.0016961    .0085
    > 465
    revenuepershare |     .00018    .000092     1.96   0.050    -3.06e-07    .0003
    > 603
```

```
   currentratio |  -.0112146    .004876    -2.30   0.021    -.0207714   -.0016
> 577
         _cons |   .4333342   .0246226    17.60   0.000     .3850749    .4815
> 936
--------------+----------------------------------------------------------------
> ----
       sigma_u |  .08594496
       sigma_e |  .10917803
           rho |  .38259563   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

583 . estimates store re_3

584 .
585 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio if icbindustryname=="Energy", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =       359
    Group variable: ric                             Number of groups  =        75

    R-sq:                                           Obs per group:
         within  = 0.2705                                         min =         2
         between = 0.2492                                         avg =       4.8
         overall = 0.2617                                         max =         5

                                                    Wald chi2(11)     =    116.90
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 75 clusters in r
    > ic)
    --------------+---------------------------------------------------------------
    > ----
                  |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    --------------+---------------------------------------------------------------
    > ----
      _Iyear_2016 |   .1004472   .0197745     5.08   0.000     .0616899    .1392
    > 046
      _Iyear_2017 |  -.0501686   .0182145    -2.75   0.006    -.0858684   -.0144
    > 687
      _Iyear_2018 |   -.005957   .0163807    -0.36   0.716    -.0380626    .0261
    > 487
      _Iyear_2019 |     .06401   .0189678     3.37   0.001     .0268339    .1011
    > 862
      dummy_ESGAA |  -.0089857   .0284447    -0.32   0.752    -.0647362    .0467
    > 649
```

```
    dummy_ESGBB |  -.0449635   .0306232    -1.47   0.142     -.104984    .0150
> 569
    dummy_ESGCC |  -.0121522   .0197784    -0.61   0.539    -.0509171    .0266
> 127
         mktcap |  -1.28e-06   3.50e-07    -3.65   0.000    -1.97e-06   -5.94e
> -07
        debtequ |   .0033815   .0026026     1.30   0.194    -.0017196    .0084
> 825
revenuepershare |   .0001793    .000092     1.95   0.051    -9.97e-07    .0003
> 596
   currentratio |  -.0113353   .0048558    -2.33   0.020    -.0208525   -.0018
> 182
          _cons |     .43551   .0242673    17.95   0.000      .387947    .4830
> 731
----------------+----------------------------------------------------------------
> ----
        sigma_u |  .08450331
        sigma_e |  .10884608
            rho |  .37606406   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

586 . estimates store re_4

587 .
588 . ** Average returns-rf
589 .
590 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
> rshare currentratio if icbindustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        357
                                                F(7, 349)         =       1.55
                                                Prob > F          =     0.1497
                                                R-squared         =     0.0248
                                                Root MSE          =     .40927

----------------+----------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+----------------------------------------------------------------
> ----
     dummy_ESGA |  -.0899069   .0791133    -1.14   0.257    -.2455057    .0656
> 918
     dummy_ESGB |  -.0434077   .0605632    -0.72   0.474    -.1625226    .0757
> 071
     dummy_ESGC |  -.0084245   .0548834    -0.15   0.878    -.1163684    .0995
> 194
```

```
         mktcap |   9.69e-07   3.37e-07     2.88   0.004     3.07e-07    1.63e
> -06
        debtequ |   .0174544   .0098938     1.76   0.079    -.0020046    .0369
> 134
revenuepershare |  -.0001139   .0002494    -0.46   0.648    -.0006045    .0003
> 767
   currentratio |   .0081777   .0121793     0.67   0.502    -.0157764    .0321
> 318
          _cons |  -.0629406   .0560478    -1.12   0.262    -.1731746    .0472
> 933
--------------------------------------------------------------------------------
> ----

591 . estimates store re_5

592 .
593 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        357
                                                F(7, 349)         =       1.51
                                                Prob > F          =     0.1610
                                                R-squared         =     0.0245
                                                Root MSE          =     .40934

--------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+------------------------------------------------------------------
> ----
 dummy_ESGAA |  -.0778046   .0885916    -0.88   0.380    -.2520451    .0964
> 359
 dummy_ESGBB |   -.05083   .0590542    -0.86   0.390    -.1669768    .0653
> 169
 dummy_ESGCC |  -.0152965   .0544351    -0.28   0.779    -.1223587    .0917
> 657
      mktcap |   8.06e-07   2.94e-07     2.74   0.007     2.27e-07    1.38e
> -06
     debtequ |    .017483   .0099117     1.76   0.079    -.0020111    .0369
> 771
revenuepershare |  -.0001104   .0002501    -0.44   0.659    -.0006022    .0003
> 814
currentratio |    .007734   .0121624     0.64   0.525    -.0161868    .0316
> 549
       _cons |  -.0579435   .0557383    -1.04   0.299    -.1675686    .0516
> 817
--------------------------------------------------------------------------------
```

```
> ———

594 . estimates store re_6

595 .
596 . **Treynor Ratio
597 .
598 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Energy", vce(robust)

Linear regression                               Number of obs     =        343
                                                F(7, 335)         =       1.41
                                                Prob > F          =     0.1999
                                                R-squared         =     0.0246
                                                Root MSE          =     .34529

------------------------------------------------------------------------------
> ———
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ———
  dummy_ESGA |  -.0938674   .0755674    -1.24   0.215    -.2425138    .0547
> 789
  dummy_ESGB |  -.0544928   .0502943    -1.08   0.279    -.1534251    .0444
> 396
  dummy_ESGC |  -.0287019   .0478952    -0.60   0.549     -.122915    .0655
> 113
      mktcap |   8.14e-07   3.03e-07     2.69   0.008     2.18e-07    1.41e
> -06
     debtequ |   .0139744   .0092563     1.51   0.132    -.0042334    .0321
> 822
revenuepershare |  -.000011   .0001828    -0.06   0.952    -.0003705    .0003
> 486
currentratio |   .0061579   .0095215     0.65   0.518    -.0125714    .0248
> 873
       _cons |  -.0454707    .049611    -0.92   0.360    -.1430591    .0521
> 176
-------------+----------------------------------------------------------------
> ———
```

```
599 . estimates store re_7

600 .
601 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Energy", vce(robust)

    Linear regression                               Number of obs     =        343
                                                    F(7, 335)         =       1.40
                                                    Prob > F          =     0.2025
                                                    R-squared         =     0.0248
                                                    Root MSE          =     .34525

    ----------------+------------------------------------------------------------
    > ---
                    |               Robust
       TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ----------------+------------------------------------------------------------
    > ---
        dummy_ESGAA |  -.0873305   .0860554    -1.01   0.311    -.2566076     .0819
    > 466
        dummy_ESGBB |   -.056661   .0495239    -1.14   0.253    -.1540781      .040
    > 756
        dummy_ESGCC |   -.041155   .0476451    -0.86   0.388    -.1348763     .0525
    > 663
             mktcap |   6.71e-07   2.54e-07     2.64   0.009     1.70e-07    1.17e
    > -06
            debtequ |   .0137899   .0093244     1.48   0.140    -.0045518     .0321
    > 315
    revenuepershare |  -9.80e-06   .0001833    -0.05   0.957    -.0003703     .0003
    > 507
       currentratio |   .0059434   .0095347     0.62   0.533    -.0128121     .0246
    > 988
              _cons |  -.0391559   .0496703    -0.79   0.431    -.1368609     .0585
    > 491
    ----------------+------------------------------------------------------------
    > ---
```

```
602 . estimates store re_8

603 .
604 . esttab re_1 re_2 re_7 re_8 re_3 re_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

605 . esttab re_1 re_2 re_7 re_8 re_3 re_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------------------------
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                   SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ------------------------------------------------------------------------------
    > ------------------------------
    dummy_ESGA         -0.266                          -0.0939
    >     -0.0244
                      (0.236)                         (0.0756)
    >    (0.0314)

    dummy_ESGB         -0.0392                         -0.0545
    >     -0.0420
                      (0.154)                         (0.0503)
    >    (0.0328)

    dummy_ESGC         -0.0640                         -0.0287
    >    -0.00958
                      (0.125)                         (0.0479)
    >    (0.0199)

    mktcap          0.00000306**    0.00000260**   0.000000814***  0.000000671***
    > -0.00000128***  -0.00000128***
                 (0.00000136)    (0.00000123)    (0.000000303)    (0.000000254)
    >  (0.000000383)    (0.000000350)

    debtequ             0.0277          0.0283          0.0140          0.0138
    >     0.00343         0.00338
                     (0.0295)        (0.0295)        (0.00926)       (0.00932)
    >   (0.00261)       (0.00260)

    revenueper~e      0.000223        0.000236      -0.0000110      -0.00000980
    >    0.000180*       0.000179*
                   (0.000581)      (0.000583)      (0.000183)      (0.000183)
    > (0.0000920)     (0.0000920)
```

```
currentratio        0.0160           0.0145          0.00616          0.00594
>     -0.0112**        -0.0113**
                   (0.0321)         (0.0319)         (0.00952)        (0.00953)
>    (0.00488)        (0.00486)

dummy_ESGAA                          -0.271                           -0.0873
>                    -0.00899
                                     (0.256)                          (0.0861)
>                    (0.0284)

dummy_ESGBB                          -0.0738                          -0.0567
>                     -0.0450
                                     (0.151)                          (0.0495)
>                    (0.0306)

dummy_ESGCC                          -0.0695                          -0.0412
>                     -0.0122
                                     (0.125)                          (0.0476)
>                    (0.0198)

_Iyear_2016
>        0.101***         0.100***

>     (0.0196)         (0.0198)

_Iyear_2017
>      -0.0488***       -0.0502***

>     (0.0183)         (0.0182)

_Iyear_2018
>     -0.00394         -0.00596

>     (0.0165)         (0.0164)

_Iyear_2019
>       0.0653***        0.0640***

>     (0.0189)         (0.0190)
```

```
    _cons              -0.192          -0.181         -0.0455         -0.0392
    >       0.433***        0.436***
                      (0.134)         (0.133)         (0.0496)        (0.0497)
    >    (0.0246)        (0.0243)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                      357             357             343             343
    >         359             359
    R-sq                 0.025           0.024           0.025           0.025
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

606 .
607 . ** Graph
608 .
609 . twoway (qfit returns_rf esg if icbindustryname=="Energy", legend(label(1 ESG
    > )))(qfit returns_rf esgcomb if icbindustryname=="Energy", legend(label(2 ESG
    >  Combined))), title("Energy: Excess Returns per ESG Score")

610 . graph export Energy.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/Energy.pdf written in PDF format)

611 .
612 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Energy"), title("Energy: ES
    > G & Excess Returns")
    > graph export Energy_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Energy"), title("Energy
    > : ESG Combined & Excess Returns")
    > graph export Energy_ESGcomb.pdf,replace
    > */
613 .
```

```
614 . ////////////Regressions for Financials (11-12) F //////////////
    >
615 . //Fama-French 3 Factor
616 .
617 . ** ESG
618 .
619 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      66.92
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3254
                                                    Root MSE          =     .21393

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9265655   .0881823    10.51   0.000     .7534706    1.099661
         SMB |   .6159107    .467981     1.32   0.189    -.3026997    1.534521
         HML |   .2472939     .14554     1.70   0.090    -.0383898    .5329777
   dummy_ESGA |    .038685   .0338894     1.14   0.254    -.0278374    .1052073
   dummy_ESGB |   .0063305   .0239567     0.26   0.792    -.0406946    .0533557
   dummy_ESGC |  -.0117393   .0211058    -0.56   0.578    -.0531683    .0296897
        _cons |   .0404903    .023958     1.69   0.091    -.0065375    .0875181
------------------------------------------------------------------------------

620 . estimates store r11_1

621 .
622 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      67.34
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3253
                                                    Root MSE          =     .21395
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9270072	.0882199	10.51	0.000	.7538383	1.100176
SMB	.6609392	.4653072	1.42	0.156	-.252423	1.574301
HML	.2362151	.1451141	1.63	0.104	-.0486326	.5210629
dummy_ESGB	-.0164927	.0313788	-0.53	0.599	-.0780869	.0451015
dummy_ESGC	-.0346173	.0292193	-1.18	0.236	-.0919725	.0227379
dummy_ESGD	-.0250294	.0338792	-0.74	0.460	-.0915317	.0414728
_cons	.0638385	.0314104	2.03	0.042	.0021823	.1254946

```
623 . estimates store r12_1

624 .
625 . ** ESG combined
626 .
627 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Financials", vce(robust)
```

Linear regression

Number of obs	=	810
F(6, 803)	=	66.41
Prob > F	=	0.0000
R-squared	=	0.3248
Root MSE	=	.21402

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9283861	.0884142	10.50	0.000	.7548359	1.101936
SMB	.6098669	.4695737	1.30	0.194	-.31187	1.531604
HML	.2492562	.1459902	1.71	0.088	-.0373113	.5358236
dummy_ESGAA	.053558	.0424839	1.26	0.208	-.0298347	.1369507
dummy_ESGBB	.0011361	.0244623	0.05	0.963	-.0468815	.0491536
dummy_ESGCC	-.0095336	.0208267	-0.46	0.647	-.0504148	.0313476
_cons	.0407341	.0239976	1.70	0.090	-.0063714	.0878396

```
628 . estimates store r11_2

629 .
630 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      66.81
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3246
                                                    Root MSE          =     .21406

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9299263   .0884337    10.52   0.000     .7563379    1.103515
         SMB |   .6476534   .4687671     1.38   0.167    -.2725002    1.567807
         HML |   .2392896   .1458667     1.64   0.101    -.0470355    .5256146
  dummy_ESGBB |  -.0207647   .0375705    -0.55   0.581    -.0945126    .0529833
  dummy_ESGCC |   -.031431   .0352156    -0.89   0.372    -.1005565    .0376945
  dummy_ESGDD |  -.0239231     .03914    -0.61   0.541    -.1007519    .0529057
        _cons |   .0628646   .0377147     1.67   0.096    -.0111664    .1368956
------------------------------------------------------------------------------

631 . estimates store r12_2

632 .
633 . ** E
634 .
635 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      67.47
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3281
                                                    Root MSE          =      .2135
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9107394	.08845	10.30	0.000	.737119	1.08436
SMB	.7250741	.4699212	1.54	0.123	-.1973448	1.647493
HML	.2187358	.1467128	1.49	0.136	-.06925	.5067217
dummy_EA	-.0286699	.0169798	-1.69	0.092	-.062	.0046601
dummy_EB	.0282374	.0264789	1.07	0.287	-.0237387	.0802135
dummy_EC	-.0294002	.0276364	-1.06	0.288	-.0836482	.0248479
_cons	.054743	.0202198	2.71	0.007	.0150532	.0944329

```
636 . estimates store r11_3

637 .
638 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Financials", vce(robust)

Linear regression                               Number of obs     =        810
                                                F(6, 803)         =      66.77
                                                Prob > F          =     0.0000
                                                R-squared         =     0.3277
                                                Root MSE          =     .21357
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9128761	.0885184	10.31	0.000	.7391213	1.086631
SMB	.6634772	.4695154	1.41	0.158	-.2581452	1.5851
HML	.2336839	.1465234	1.59	0.111	-.0539303	.521298
dummy_EB	.0546817	.0251491	2.17	0.030	.005316	.1040474
dummy_EC	-.0026979	.0264111	-0.10	0.919	-.0545408	.049145
dummy_ED	.0266985	.0172963	1.54	0.123	-.0072528	.0606497
_cons	.027123	.0172669	1.57	0.117	-.0067705	.0610165

```
639 . estimates store r12_3

640 .
641 . ** S
642 .
643 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      66.77
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3256
                                                    Root MSE          =      .2139

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .9218352   .0885584    10.41   0.000      .748002    1.095668
         SMB |   .6378902   .4665689     1.37   0.172    -.2779484    1.553729
         HML |   .2424287   .1453667     1.67   0.096     -.042915    .5277724
    dummy_SA |   .0242599   .0319384     0.76   0.448    -.0384328    .0869526
    dummy_SB |   .0097515   .0272431     0.36   0.720    -.0437246    .0632276
    dummy_SC |  -.0133472   .0250328    -0.53   0.594    -.0624846    .0357902
       _cons |   .0419599   .0269359     1.56   0.120    -.0109132    .0948331
------------------------------------------------------------------------------

644 . estimates store r11_4

645 .
646 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      67.08
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3256
                                                    Root MSE          =      .2139
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9212666	.0885711	10.40	0.000	.7474083	1.095125
SMB	.6754545	.4673215	1.45	0.149	-.2418614	1.59277
HML	.2329459	.1455807	1.60	0.110	-.0528177	.5187095
dummy_SB	-.0075006	.0277278	-0.27	0.787	-.0619281	.0469269
dummy_SC	-.0306427	.0255518	-1.20	0.231	-.0807989	.0195135
dummy_SD	-.0205385	.0361232	-0.57	0.570	-.0914455	.0503686
_cons	.059747	.0280093	2.13	0.033	.0047669	.1147271

```
647 . estimates store r12_4

648 .
649 . ** G
650 .
651 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Financials", vce(robust)
```

Linear regression

Number of obs	=	810
F(6, 803)	=	65.69
Prob > F	=	0.0000
R-squared	=	0.3253
Root MSE	=	.21395

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.9341197	.088588	10.54	0.000	.7602283	1.108011
SMB	.5616175	.4689934	1.20	0.231	-.3589802	1.482215
HML	.2626505	.1461136	1.80	0.073	-.0241592	.5494602
dummy_GA	.0166187	.0289997	0.57	0.567	-.0403055	.0735428
dummy_GB	.0151615	.0228229	0.66	0.507	-.0296381	.0599612
dummy_GC	-.0076367	.0243886	-0.31	0.754	-.0555096	.0402361
_cons	.0293161	.0253203	1.16	0.247	-.0203858	.0790179

```
652 . estimates store r11_5

653 .
654 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Financials", vce(robust)

    Linear regression                               Number of obs     =        810
                                                    F(6, 803)         =      66.48
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3255
                                                    Root MSE          =     .21391

    ------------------------------------------------------------------------------
                 |               Robust
      returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
    -------------+----------------------------------------------------------------
           mktrf |   .9328712    .088478    10.54   0.000     .7591957    1.106547
             SMB |   .6026569   .4669335     1.29   0.197    -.3138974    1.519211
             HML |   .2524468    .146014     1.73   0.084    -.0341674     .539061
        dummy_GB |  -.0021331   .0222362    -0.10   0.924    -.0457811    .0415149
        dummy_GC |  -.0248835   .0239049    -1.04   0.298    -.0718069     .02204
        dummy_GD |  -.0223253   .0292912    -0.76   0.446    -.0798217     .035171
           _cons |   .0472178   .0246667     1.91   0.056     -.001201    .0956367
    ------------------------------------------------------------------------------

655 . estimates store r12_5

656 .
657 . ** Final
658 .
659 . esttab r11_1 r11_2 r11_3 r11_4 r11_5 using FF_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

660 . esttab r11_1 r11_2 r11_3 r11_4 r11_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------
                          (1)             (2)             (3)             (4)
    >         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ------------------------------------------------------------------------------
    > ------------
    mktrf               0.927***        0.928***        0.911***        0.922***
    >       0.934***
                       (0.0882)        (0.0884)        (0.0884)        (0.0886)
    >    (0.0886)
```

```
SMB                 0.616          0.610          0.725          0.638
>       0.562
                  (0.468)        (0.470)        (0.470)        (0.467)
>     (0.469)

HML                 0.247*         0.249*         0.219          0.242*
>       0.263*
                  (0.146)        (0.146)        (0.147)        (0.145)
>     (0.146)

dummy_ESGA          0.0387
>
                  (0.0339)
>

dummy_ESGB         0.00633
>
                  (0.0240)
>

dummy_ESGC         -0.0117
>
                  (0.0211)
>

dummy_ESGAA                        0.0536
>
                                 (0.0425)
>

dummy_ESGBB                       0.00114
>
                                 (0.0245)
>

dummy_ESGCC                       -0.00953
>
                                 (0.0208)
>

dummy_EA                                        -0.0287*
>
                                                (0.0170)
>
```

dummy_EB	0.0282		
	(0.0265)		
dummy_EC	-0.0294		
	(0.0276)		
dummy_SA		0.0243	
		(0.0319)	
dummy_SB		0.00975	
		(0.0272)	
dummy_SC		-0.0133	
		(0.0250)	
dummy_GA	0.0166		
	(0.0290)		
dummy_GB	0.0152		
	(0.0228)		
dummy_GC	-0.00764		
	(0.0244)		

```
_cons              0.0405*         0.0407*         0.0547***       0.0420
>      0.0293
                  (0.0240)        (0.0240)        (0.0202)        (0.0269)
>    (0.0253)
------------------------------------------------------------------------------
> ──────────────
N                     810             810             810             810
>         810
R-sq                0.325           0.325           0.328           0.326
>       0.325
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

661 . esttab r12_1 r12_2 r12_3 r12_4 r12_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf               0.927***        0.930***        0.913***        0.921***
>       0.933***
                  (0.0882)        (0.0884)        (0.0885)        (0.0886)
>    (0.0885)

SMB                 0.661           0.648           0.663           0.675
>       0.603
                   (0.465)         (0.469)         (0.470)         (0.467)
>     (0.467)

HML                 0.236           0.239           0.234           0.233
>       0.252*
                   (0.145)         (0.146)         (0.147)         (0.146)
>     (0.146)

dummy_ESGB         -0.0165
>
                  (0.0314)
>
```

dummy_ESGC	-0.0346			
	(0.0292)			
dummy_ESGD	-0.0250			
	(0.0339)			
dummy_ESGBB		-0.0208		
		(0.0376)		
dummy_ESGCC		-0.0314		
		(0.0352)		
dummy_ESGDD		-0.0239		
		(0.0391)		
dummy_EB			0.0547**	
			(0.0251)	
dummy_EC			-0.00270	
			(0.0264)	
dummy_ED			0.0267	
			(0.0173)	
dummy_SB				-0.00750
				(0.0277)

dummy_SC				-0.0306
				(0.0256)
dummy_SD				-0.0205
				(0.0361)
dummy_GB				
	-0.00213			
	(0.0222)			
dummy_GC				
	-0.0249			
	(0.0239)			
dummy_GD				
	-0.0223			
	(0.0293)			
_cons	0.0638**	0.0629*	0.0271	0.0597**
	0.0472*			
	(0.0314)	(0.0377)	(0.0173)	(0.0280)
	(0.0247)			
N	810	810	810	810
	810			
R-sq	0.325	0.325	0.328	0.326
	0.326			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
662 .
663 . //Sharpe Ratio
664 .
665 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =         77
                                                    F(7, 69)          =       3.27
                                                    Prob > F          =     0.0047
                                                    R-squared         =     0.1754
                                                    Root MSE          =     1.1602

    ----------------+------------------------------------------------------------------
    > ---
                    |               Robust
        SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ----------------+------------------------------------------------------------------
    > ---
         dummy_ESGA |  -.2815256    1.08917    -0.26   0.797     -2.45436    1.891
    > 309
         dummy_ESGB |   .3618883   .5583137     0.65   0.519     -.751917    1.475
    > 694
         dummy_ESGC |   .3403317   .4383228     0.78   0.440    -.5340983    1.214
    > 762
             mktcap |   .0000299   8.99e-06     3.32   0.001     .0000119    .0000
    > 478
            debtequ |  -.0115179    .045677    -0.25   0.802     -.102641    .0796
    > 052
    revenuepershare |   .0026658    .011302     0.24   0.814    -.0198812    .0252
    > 127
       currentratio |  -.0127425   .0478508    -0.27   0.791    -.1082023    .0827
    > 172
              _cons |    .139458   .3971562     0.35   0.727     -.652847    .9317
    > 631
    ----------------+------------------------------------------------------------------
    > ---
```

```
666 . estimates store rf_1

667 .
668 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
    > uepershare currentratio if icbindustryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =         77
                                                    F(7, 69)          =       3.27
                                                    Prob > F          =     0.0047
                                                    R-squared         =     0.1754
                                                    Root MSE          =     1.1602

    ------------------------------------------------------------------------------
    > ----
                 |               Robust
    SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ----
     dummy_ESGAA |  -.2815256    1.08917    -0.26   0.797     -2.45436    1.891
    > 309
     dummy_ESGBB |   .3618883   .5583137     0.65   0.519     -.751917    1.475
    > 694
     dummy_ESGCC |   .3403317   .4383228     0.78   0.440    -.5340983    1.214
    > 762
          mktcap |   .0000299   8.99e-06     3.32   0.001     .0000119    .0000
    > 478
         debtequ |  -.0115179    .045677    -0.25   0.802     -.102641    .0796
    > 052
revenuepershare |   .0026658    .011302     0.24   0.814    -.0198812    .0252
    > 127
    currentratio |  -.0127425   .0478508    -0.27   0.791    -.1082023    .0827
    > 172
           _cons |    .139458   .3971562     0.35   0.727     -.652847    .9317
    > 631
    ------------------------------------------------------------------------------
    > ----
```

```
669 . estimates store rf_2

670 .
671 . ** STD regression
672 .
673 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Financials", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =         78
    Group variable: ric                             Number of groups  =         17

    R-sq:                                           Obs per group:
         within  = 0.2321                                         min =          2
         between = 0.7638                                         avg =        4.6
         overall = 0.6107                                         max =          5

                                                    Wald chi2(11)     =     788.12
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 17 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0580502   .0290726     2.00   0.046      .001069     .1150
    > 315
        _Iyear_2017 |  -.0357573   .0270446    -1.32   0.186    -.0887637     .0172
    > 492
        _Iyear_2018 |  -.0118834    .020398    -0.58   0.560    -.0518628     .0280
    > 959
        _Iyear_2019 |   .0234659   .0210708     1.11   0.265    -.0178322      .064
    > 764
         dummy_ESGA |  -.0927928   .0688944    -1.35   0.178    -.2278233     .0422
    > 377
         dummy_ESGB |  -.0669643   .0537141    -1.25   0.213     -.172242     .0383
    > 135
         dummy_ESGC |  -.0718853   .0581994    -1.24   0.217     -.185954     .0421
    > 834
             mktcap |  -1.04e-06   8.78e-07    -1.18   0.236    -2.76e-06    6.80e
    > -07
            debtequ |   .0035378   .0024024     1.47   0.141    -.0011708     .0082
    > 465
    revenuepershare |   .0012577   .0011736     1.07   0.284    -.0010425     .0035
    > 579
```

```
   currentratio |   .0316289   .0043961     7.19   0.000     .0230128     .040
> 245
         _cons |   .2027032   .0615548     3.29   0.001     .0820581    .3233
> 484
--------------+----------------------------------------------------------------
> ----
       sigma_u |  .05187716
       sigma_e |  .06811792
           rho |  .36708949   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

674 . estimates store rf_3

675 .
676 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio if icbindustryname=="Financials", vce(robust
    > )
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =         78
    Group variable: ric                             Number of groups  =         17

    R-sq:                                           Obs per group:
         within  = 0.2321                                         min =          2
         between = 0.7638                                         avg =        4.6
         overall = 0.6107                                         max =          5

                                                    Wald chi2(11)     =     788.12
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 17 clusters in r
    > ic)
    --------------+----------------------------------------------------------------
    > ----
                  |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    --------------+----------------------------------------------------------------
    > ----
       _Iyear_2016 |   .0580502   .0290726     2.00   0.046      .001069    .1150
    > 315
       _Iyear_2017 |  -.0357573   .0270446    -1.32   0.186    -.0887637    .0172
    > 492
       _Iyear_2018 |  -.0118834    .020398    -0.58   0.560    -.0518628    .0280
    > 959
       _Iyear_2019 |   .0234659   .0210708     1.11   0.265    -.0178322     .064
    > 764
       dummy_ESGAA |  -.0927928   .0688944    -1.35   0.178    -.2278233    .0422
```

```
> 377
    dummy_ESGBB |  -.0669643   .0537141    -1.25   0.213     -.172242    .0383
> 135
    dummy_ESGCC |  -.0718853   .0581994    -1.24   0.217     -.185954    .0421
> 834
         mktcap |  -1.04e-06   8.78e-07    -1.18   0.236    -2.76e-06    6.80e
> -07
        debtequ |   .0035378   .0024024     1.47   0.141    -.0011708    .0082
> 465
revenuepershare |   .0012577   .0011736     1.07   0.284    -.0010425    .0035
> 579
   currentratio |   .0316289   .0043961     7.19   0.000     .0230128     .040
> 245
          _cons |   .2027032   .0615548     3.29   0.001     .0820581    .3233
> 484
----------------+----------------------------------------------------------------
> ----
        sigma_u |  .05187716
        sigma_e |  .06811792
            rho |  .36708949   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

677 . estimates store rf_4

678 .
679 . ** Average returns-rf
680 .
681 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Financials", vce(robust)

Linear regression                               Number of obs     =         77
                                                F(7, 69)          =       1.49
                                                Prob > F          =     0.1855
                                                R-squared         =     0.1000
                                                Root MSE          =     .29153

----------------+----------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+----------------------------------------------------------------
> ----
     dummy_ESGA |   .0155661   .2693508     0.06   0.954     -.521774    .5529
> 062
     dummy_ESGB |   .1126188   .1623377     0.69   0.490    -.2112361    .4364
> 736
     dummy_ESGC |     .11328   .1548451     0.73   0.467    -.1956275    .4221
```

```
> 876
         mktcap |   5.27e-06   2.33e-06     2.26   0.027     6.14e-07    9.92e
> -06
       debtequ |   .0029967   .0106014     0.28   0.778    -.0181525     .024
> 146
revenuepershare |  -.0001155   .0021477    -0.05   0.957       -.0044    .0041
> 691
   currentratio |   .0168443   .0204805     0.82   0.414    -.0240132    .0577
> 018
         _cons |  -.0505844   .1130531    -0.45   0.656    -.2761192    .1749
> 505
---------------+----------------------------------------------------------------
> ----

682 . estimates store rf_5

683 .
684 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Financials", vce(robust)

Linear regression                               Number of obs     =         77
                                                F(7, 69)          =       1.49
                                                Prob > F          =     0.1855
                                                R-squared         =     0.1000
                                                Root MSE          =     .29153

---------------+----------------------------------------------------------------
> ----
               |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
---------------+----------------------------------------------------------------
> ----
    dummy_ESGAA |   .0155661   .2693508     0.06   0.954     -.521774     .5529
> 062
    dummy_ESGBB |   .1126188   .1623377     0.69   0.490    -.2112361    .4364
> 736
    dummy_ESGCC |     .11328   .1548451     0.73   0.467    -.1956275    .4221
> 876
         mktcap |   5.27e-06   2.33e-06     2.26   0.027     6.14e-07    9.92e
> -06
       debtequ |   .0029967   .0106014     0.28   0.778    -.0181525     .024
> 146
revenuepershare |  -.0001155   .0021477    -0.05   0.957       -.0044    .0041
> 691
   currentratio |   .0168443   .0204805     0.82   0.414    -.0240132    .0577
> 018
         _cons |  -.0505844   .1130531    -0.45   0.656    -.2761192    .1749
> 505
```

```
-----------------+------------------------------------------------------------------------
> ----

685 . estimates store rf_6

686 .
687 . **Treynor Ratio
688 .
689 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Financials", vce(robust)

Linear regression                               Number of obs     =         72
                                                F(7, 64)          =       2.78
                                                Prob > F          =     0.0138
                                                R-squared         =     0.1752
                                                Root MSE          =     .24605

-----------------+------------------------------------------------------------------------
> ----
                 |               Robust
   TreynorRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-----------------+------------------------------------------------------------------------
> ----
     dummy_ESGA  |  -.0966396   .2338358    -0.41   0.681    -.5637803    .3705
> 012
     dummy_ESGB  |   .0606107   .1417125     0.43   0.670    -.2224924    .3437
> 139
     dummy_ESGC  |   .0943306   .1212763     0.78   0.440    -.1479467    .3366
> 079
         mktcap  |   7.14e-06   2.16e-06     3.30   0.002     2.82e-06    .0000
> 115
        debtequ  |  -.0027415   .0087357    -0.31   0.755     -.020193    .0147
> 101
revenuepershare  |  -.0007064   .0025321    -0.28   0.781    -.0057649     .004
> 352
   currentratio  |   .0005536   .0146787     0.04   0.970    -.0287704    .0298
> 776
          _cons  |   .0244603   .1005169     0.24   0.809    -.1763453    .2252
> 658
-----------------+------------------------------------------------------------------------
> ----
```

```
690 . estimates store rf_7

691 .
692 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Financials", vce(robust)

    Linear regression                               Number of obs     =         72
                                                    F(7, 64)          =       2.78
                                                    Prob > F          =     0.0138
                                                    R-squared         =     0.1752
                                                    Root MSE          =     .24605

    ------------------------------------------------------------------------------
    > ----
                 |               Robust
    TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ----
     dummy_ESGAA |  -.0966396   .2338358    -0.41   0.681    -.5637803    .3705
    > 012
     dummy_ESGBB |   .0606107   .1417125     0.43   0.670    -.2224924    .3437
    > 139
     dummy_ESGCC |   .0943306   .1212763     0.78   0.440    -.1479467    .3366
    > 079
          mktcap |   7.14e-06   2.16e-06     3.30   0.002     2.82e-06    .0000
    > 115
         debtequ |  -.0027415   .0087357    -0.31   0.755     -.020193    .0147
    > 101
revenuepershare |  -.0007064   .0025321    -0.28   0.781    -.0057649     .004
    > 352
    currentratio |   .0005536   .0146787     0.04   0.970    -.0287704    .0298
    > 776
           _cons |   .0244603   .1005169     0.24   0.809    -.1763453    .2252
    > 658
    ------------------------------------------------------------------------------
    > ----
```

```
693 . estimates store rf_8

694 .
695 . esttab rf_1 rf_2 rf_7 rf_8 rf_3 rf_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

696 . esttab rf_1 rf_2 rf_7 rf_8 rf_3 rf_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------------------------
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                   SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ------------------------------------------------------------------------------
    > ------------------------------
    dummy_ESGA         -0.282                          -0.0966
    >     -0.0928
                      (1.089)                         (0.234)
    >    (0.0689)

    dummy_ESGB          0.362                           0.0606
    >     -0.0670
                      (0.558)                         (0.142)
    >    (0.0537)

    dummy_ESGC          0.340                           0.0943
    >     -0.0719
                      (0.438)                         (0.121)
    >    (0.0582)

    mktcap          0.0000299***    0.0000299***   0.00000714***   0.00000714***
    > -0.00000104     -0.00000104
                 (0.00000899)    (0.00000899)    (0.00000216)    (0.00000216)    (
    > 0.000000878)    (0.000000878)

    debtequ           -0.0115         -0.0115        -0.00274        -0.00274
    >     0.00354         0.00354
                     (0.0457)        (0.0457)        (0.00874)       (0.00874)
    >   (0.00240)       (0.00240)

    revenueper~e       0.00267         0.00267       -0.000706       -0.000706
    >     0.00126         0.00126
                     (0.0113)        (0.0113)        (0.00253)       (0.00253)
    >   (0.00117)       (0.00117)
```

```
currentratio      -0.0127         -0.0127        0.000554        0.000554
>      0.0316***       0.0316***
                  (0.0479)        (0.0479)        (0.0147)        (0.0147)
>   (0.00440)       (0.00440)

dummy_ESGAA                         -0.282                         -0.0966
>                    -0.0928
                                    (1.089)                         (0.234)
>                   (0.0689)

dummy_ESGBB                          0.362                          0.0606
>                    -0.0670
                                    (0.558)                         (0.142)
>                   (0.0537)

dummy_ESGCC                          0.340                          0.0943
>                    -0.0719
                                    (0.438)                         (0.121)
>                   (0.0582)

_Iyear_2016
>      0.0581**        0.0581**

>    (0.0291)        (0.0291)

_Iyear_2017
>     -0.0358         -0.0358

>    (0.0270)        (0.0270)

_Iyear_2018
>     -0.0119         -0.0119

>    (0.0204)        (0.0204)

_Iyear_2019
>      0.0235          0.0235

>    (0.0211)        (0.0211)
```

```
    _cons                0.139           0.139          0.0245          0.0245
    >       0.203***        0.203***
                        (0.397)         (0.397)         (0.101)         (0.101)
    >    (0.0616)        (0.0616)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                       77              77              72              72
    >          78              78
    R-sq                 0.175           0.175           0.175           0.175
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

697 .
698 . ** Graph
699 .
700 . twoway (qfit returns_rf esg if icbindustryname=="Financials", legend(label(1
    >  ESG)))(qfit returns_rf esgcomb if icbindustryname=="Financials", legend(lab
    > el(2 ESG Combined))), title("Financials: Excess Returns per ESG Score")

701 . graph export Financials.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/Financials.pdf written in PDF format)

702 .
703 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Financials"), title("Financ
    > ials: ESG & Excess Returns")
    > graph export Financials_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Financials"), title("Fi
    > nancials: ESG Combined & Excess Returns")
    > graph export Financials_ESGcomb.pdf,replace
    > */
704 .
```

```
705 . ////////////Regressions for Health Care (13-14) G //////////////
    >
706 . //Fama-French 3 Factor
707 .
708 . ** ESG
709 .
710 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       8.13
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0964
                                                    Root MSE          =     .29815

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4868018    .211506     2.30   0.022     .0708973    .9027063
         SMB |   .3531419   .9732034     0.36   0.717    -1.560562    2.266845
         HML |  -.4430429   .2949394    -1.50   0.134    -1.023011    .1369247
   dummy_ESGA |   .0654058   .0476569     1.37   0.171    -.0283064    .1591181
   dummy_ESGB |   -.007665   .0479881    -0.16   0.873    -.1020285    .0866986
   dummy_ESGC |  -.0212538   .0527597    -0.40   0.687    -.1250004    .0824927
        _cons |    .048234   .0520509     0.93   0.355    -.0541187    .1505867
------------------------------------------------------------------------------

711 . estimates store r13_1

712 .
713 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       6.74
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0946
                                                    Root MSE          =     .29844
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.5029748	.2126705	2.37	0.019	.0847803	.9211692
SMB	.3275399	.9876467	0.33	0.740	-1.614565	2.269645
HML	-.4407477	.2983636	-1.48	0.140	-1.027449	.1459534
dummy_ESGB	-.0151541	.0334685	-0.45	0.651	-.0809665	.0506583
dummy_ESGC	-.028593	.0407914	-0.70	0.484	-.108805	.051619
dummy_ESGD	.0448881	.0557869	0.80	0.422	-.0648111	.1545874
_cons	.0533014	.0425955	1.25	0.212	-.0304581	.137061

```
714 . estimates store r14_1

715 .
716 . ** ESG combined
717 .
718 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Health Care", vce(robust)

Linear regression                               Number of obs     =        377
                                                F(6, 370)         =       8.39
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0966
                                                Root MSE          =     .29811
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4910043	.2090428	2.35	0.019	.0799434	.9020652
SMB	.3467087	.9615342	0.36	0.719	-1.544049	2.237466
HML	-.4362629	.2923725	-1.49	0.137	-1.011183	.1386572
dummy_ESGAA	.085824	.0505168	1.70	0.090	-.0135121	.18516
dummy_ESGBB	-.0011097	.0478668	-0.02	0.982	-.0952349	.0930155
dummy_ESGCC	-.020154	.0506271	-0.40	0.691	-.1197069	.079399
_cons	.0481231	.051807	0.93	0.354	-.05375	.1499961

```
719 . estimates store r13_2

720 .
721 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       6.59
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0944
                                                    Root MSE          =     .29848

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .5090919   .2104661     2.42   0.016     .0952321    .9229517
         SMB |   .2908552   .9789486     0.30   0.767    -1.634146    2.215856
         HML |  -.4322903   .2965879    -1.46   0.146      -1.0155    .1509189
 dummy_ESGBB |     .00253   .0407032     0.06   0.950    -.0775086    .0825685
 dummy_ESGCC |  -.0166352   .0442655    -0.38   0.707    -.1036788    .0704084
 dummy_ESGDD |   .0558213   .0607512     0.92   0.359    -.0636396    .1752823
       _cons |    .041302   .0486564     0.85   0.397    -.0543757    .1369797
------------------------------------------------------------------------------

722 . estimates store r14_2

723 .
724 . ** E
725 .
726 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       6.26
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0908
                                                    Root MSE          =     .29906
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.5023341	.2113626	2.38	0.018	.0867115	.9179567
SMB	.2742654	.9681623	0.28	0.777	-1.629525	2.178056
HML	-.4274976	.293777	-1.46	0.146	-1.005179	.1501844
dummy_EA	.0225227	.0440917	0.51	0.610	-.064179	.1092244
dummy_EB	.0098193	.044164	0.22	0.824	-.0770246	.0966632
dummy_EC	-.021293	.0586506	-0.36	0.717	-.1366232	.0940373
_cons	.0345001	.0456704	0.76	0.450	-.055306	.1243062

```
727 . estimates store r13_3

728 .
729 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Health Care", vce(robust)

Linear regression                               Number of obs     =        377
                                                F(6, 370)         =       6.28
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0915
                                                Root MSE          =     .29895
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.500279	.2110445	2.37	0.018	.0852818	.9152761
SMB	.2925565	.9686167	0.30	0.763	-1.612128	2.197241
HML	-.4318098	.2929317	-1.47	0.141	-1.00783	.1442099
dummy_EB	.003923	.0338312	0.12	0.908	-.0626025	.0704484
dummy_EC	-.0271622	.0512191	-0.53	0.596	-.1278793	.0735549
dummy_ED	.0328698	.0464615	0.71	0.480	-.058492	.1242316
_cons	.0408866	.0376957	1.08	0.279	-.0332381	.1150114

```
730 . estimates store r14_3

731 .
732 . ** S
733 .
734 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       8.27
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1013
                                                    Root MSE          =     .29734

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4566032   .2118764     2.16   0.032     .0399704    .8732361
         SMB |   .4822259   .9718668     0.50   0.620    -1.428849    2.393301
         HML |  -.4809501   .2950543    -1.63   0.104    -1.061144    .0992437
    dummy_SA |   .0755203   .0491818     1.54   0.126    -.0211905    .1722312
    dummy_SB |   .0080974   .0525913     0.15   0.878     -.095318    .1115128
    dummy_SC |  -.0107786   .0582521    -0.19   0.853    -.1253252    .1037681
       _cons |   .0321974   .0557165     0.58   0.564    -.0773632     .141758
------------------------------------------------------------------------------

735 . estimates store r13_4

736 .
737 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       6.98
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0950
                                                    Root MSE          =     .29838
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4721692	.2136787	2.21	0.028	.0519922	.8923462
SMB	.5115539	.9874895	0.52	0.605	-1.430242	2.45335
HML	-.4859071	.2988139	-1.63	0.105	-1.073494	.1016793
dummy_SB	-.036949	.030488	-1.21	0.226	-.0969005	.0230024
dummy_SC	-.0560075	.039808	-1.41	0.160	-.1342857	.0222708
dummy_SD	.0021525	.0569379	0.04	0.970	-.1098099	.1141149
_cons	.0761049	.0387551	1.96	0.050	-.000103	.1523129

```
738 . estimates store r14_4

739 .
740 . ** G
741 .
742 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Health Care", vce(robust)

Linear regression                               Number of obs     =        377
                                                F(6, 370)         =       6.51
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0985
                                                Root MSE          =     .29779
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4573928	.2134965	2.14	0.033	.0375742	.8772115
SMB	.4913231	.971143	0.51	0.613	-1.418329	2.400975
HML	-.4995286	.2967089	-1.68	0.093	-1.082976	.0839187
dummy_GA	.0257381	.0549676	0.47	0.640	-.0823501	.1338262
dummy_GB	.050128	.0501829	1.00	0.318	-.0485515	.1488076
dummy_GC	.0902316	.0551073	1.64	0.102	-.0181311	.1985944
_cons	.0004665	.0517381	0.01	0.993	-.101271	.102204

```
743 . estimates store r13_5

744 .
745 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        377
                                                    F(6, 370)         =       6.69
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1003
                                                    Root MSE          =     .2975

    ------------------------------------------------------------------------------
                 |               Robust
      returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
    -------------+----------------------------------------------------------------
           mktrf |   .4720969   .2147097     2.20   0.029     .0498926    .8943013
             SMB |   .4173731   .9990352     0.42   0.676    -1.547126    2.381872
             HML |  -.4715658   .3028567    -1.56   0.120    -1.067102    .1239705
        dummy_GB |   .0589943   .0379011     1.56   0.120    -.0155343     .133523
        dummy_GC |   .0987119   .0437872     2.25   0.025     .012609    .1848148
        dummy_GD |   .0546031   .0618734     0.88   0.378    -.0670646    .1762708
           _cons |  -.0102205   .0472689    -0.22   0.829    -.1031699    .0827289
    ------------------------------------------------------------------------------

746 . estimates store r14_5

747 .
748 . ** Final
749 .
750 . esttab r13_1 r13_2 r13_3 r13_4 r13_5 using FF_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

751 . esttab r13_1 r13_2 r13_3 r13_4 r13_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------
                          (1)             (2)             (3)             (4)
    >         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ------------------------------------------------------------------------------
    > ------------
    mktrf               0.487**         0.491**         0.502**         0.457**
    >       0.457**
                       (0.212)         (0.209)         (0.211)         (0.212)
    >     (0.213)
```

SMB	0.353	0.347	0.274	0.482
>	0.491			
	(0.973)	(0.962)	(0.968)	(0.972)
>	(0.971)			
HML	-0.443	-0.436	-0.427	-0.481
>	-0.500*			
	(0.295)	(0.292)	(0.294)	(0.295)
>	(0.297)			
dummy_ESGA	0.0654			
>				
	(0.0477)			
>				
dummy_ESGB	-0.00766			
>				
	(0.0480)			
>				
dummy_ESGC	-0.0213			
>				
	(0.0528)			
>				
dummy_ESGAA		0.0858*		
>				
		(0.0505)		
>				
dummy_ESGBB		-0.00111		
>				
		(0.0479)		
>				
dummy_ESGCC		-0.0202		
>				
		(0.0506)		
>				
dummy_EA			0.0225	
>				
			(0.0441)	
>				

dummy_EB	0.00982		
	(0.0442)		
dummy_EC	-0.0213		
	(0.0587)		
dummy_SA		0.0755	
		(0.0492)	
dummy_SB		0.00810	
		(0.0526)	
dummy_SC		-0.0108	
		(0.0583)	
dummy_GA	0.0257		
	(0.0550)		
dummy_GB	0.0501		
	(0.0502)		
dummy_GC	0.0902		
	(0.0551)		

```
_cons              0.0482          0.0481          0.0345          0.0322
>    0.000467
                  (0.0521)        (0.0518)        (0.0457)        (0.0557)
>    (0.0517)
------------------------------------------------------------------------------
> ─────────────
N                     377             377             377             377
>         377
R-sq                0.096           0.097           0.091           0.101
>       0.099
------------------------------------------------------------------------------
> ─────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

752 . esttab r14_1 r14_2 r14_3 r14_4 r14_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ─────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ─────────────
mktrf              0.503**         0.509**         0.500**         0.472**
>       0.472**
                  (0.213)         (0.210)         (0.211)         (0.214)
>     (0.215)

SMB                0.328           0.291           0.293           0.512
>       0.417
                  (0.988)         (0.979)         (0.969)         (0.987)
>     (0.999)

HML               -0.441          -0.432          -0.432          -0.486
>      -0.472
                  (0.298)         (0.297)         (0.293)         (0.299)
>     (0.303)

dummy_ESGB        -0.0152
>
                 (0.0335)
>
```

dummy_ESGC	-0.0286			
	(0.0408)			
dummy_ESGD	0.0449			
	(0.0558)			
dummy_ESGBB		0.00253		
		(0.0407)		
dummy_ESGCC		-0.0166		
		(0.0443)		
dummy_ESGDD		0.0558		
		(0.0608)		
dummy_EB			0.00392	
			(0.0338)	
dummy_EC			-0.0272	
			(0.0512)	
dummy_ED			0.0329	
			(0.0465)	
dummy_SB				-0.0369
				(0.0305)

dummy_SC				-0.0560
				(0.0398)
dummy_SD				0.00215
				(0.0569)
dummy_GB				
	0.0590			
	(0.0379)			
dummy_GC				
	0.0987**			
	(0.0438)			
dummy_GD				
	0.0546			
	(0.0619)			
_cons	0.0533	0.0413	0.0409	0.0761*
	-0.0102			
		(0.0426)	(0.0487)	(0.0377)	(0.0388)
	(0.0473)			
N	377	377	377	377
	377			
R-sq	0.095	0.094	0.092	0.095
	0.100			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
753 .
754 . //Sharpe Ratio
755 .
756 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        333
                                                    F(7, 325)         =       4.74
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0905
                                                    Root MSE          =     1.0348

    ----------------+------------------------------------------------------------------
    > ---
                    |               Robust
        SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ----------------+------------------------------------------------------------------
    > ---
         dummy_ESGA |   .5997329   .2477432     2.42   0.016     .1123501    1.087
    > 116
         dummy_ESGB |   .3433585   .1755818     1.96   0.051    -.0020618    .6887
    > 788
         dummy_ESGC |   .1334296   .1608046     0.83   0.407    -.1829197    .4497
    > 789
             mktcap |   1.20e-06   1.11e-06     1.08   0.282    -9.85e-07    3.38e
    > -06
            debtequ |  -.0432824   .0138867    -3.12   0.002    -.0706017   -.0159
    > 632
    revenuepershare |  -.0009892   .0006853    -1.44   0.150    -.0023374     .000
    > 359
       currentratio |   .0053825   .0295505     0.18   0.856    -.0527519     .063
    > 517
              _cons |   .3766771   .1808623     2.08   0.038     .0208685    .7324
    > 857
    ----------------+------------------------------------------------------------------
    > ---
```

```
757 . estimates store rg_1

758 .
759 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
    > uepershare currentratio if icbindustryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        333
                                                    F(7, 325)         =       4.93
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0988
                                                    Root MSE          =       1.03

    ----------------+------------------------------------------------------------
    > ---
                    |               Robust
       SharpeRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ----------------+------------------------------------------------------------
    > ---
       dummy_ESGAA  |   .7519781   .2780753     2.70   0.007     .2049233    1.299
    > 033
       dummy_ESGBB  |    .324592    .174316     1.86   0.063    -.0183382    .6675
    > 222
       dummy_ESGCC  |   .1179842   .1584072     0.74   0.457    -.1936487    .4296
    > 171
            mktcap  |  2.08e-06   9.60e-07     2.17   0.031     1.90e-07    3.97e
    > -06
           debtequ  |  -.0430125     .01384    -3.11   0.002    -.0702397   -.0157
    > 853
    revenuepershare |  -.0008927   .0007077    -1.26   0.208    -.0022848    .0004
    > 995
      currentratio  |   .0048823    .029354     0.17   0.868    -.0528655    .0626
    > 301
             _cons  |    .374195   .1803361     2.07   0.039     .0194216    .7289
    > 684
    ----------------+------------------------------------------------------------
    > ---
```

```
760 . estimates store rg_2

761 .
762 . ** STD regression
763 .
764 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Health Care", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =       337
    Group variable: ric                             Number of groups  =        70

    R-sq:                                           Obs per group:
         within  = 0.2053                                         min =         2
         between = 0.3865                                         avg =       4.8
         overall = 0.3093                                         max =         5

                                                    Wald chi2(11)     =     87.52
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 70 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0011097   .0145478     0.08   0.939    -.0274035    .0296
    > 229
        _Iyear_2017 |  -.0346852   .0128652    -2.70   0.007    -.0599004   -.0094
    > 699
        _Iyear_2018 |   .0277213   .0170115     1.63   0.103    -.0056206    .0610
    > 633
        _Iyear_2019 |   .0910129    .018756     4.85   0.000     .0542519    .1277
    > 739
         dummy_ESGA |  -.0638526    .030298    -2.11   0.035    -.1232357   -.0044
    > 696
         dummy_ESGB |  -.0225241   .0254281    -0.89   0.376    -.0723623    .0273
    > 141
         dummy_ESGC |   .0000189   .0248187     0.00   0.999    -.0486248    .0486
    > 626
             mktcap |  -7.77e-07   2.58e-07    -3.01   0.003    -1.28e-06   -2.70e
    > -07
            debtequ |   .0053734   .0013248     4.06   0.000     .0027769      .00
    > 797
    revenuepershare |  -.0000203   .0001412    -0.14   0.886    -.0002971    .0002
    > 565
```

```
   currentratio |   .0181217    .006039     3.00   0.003     .0062856    .0299
> 579
         _cons |    .280188   .0304814     9.19   0.000     .2204455    .3399
> 305
-------------+----------------------------------------------------------------
> ----
       sigma_u |  .09030696
       sigma_e |  .09274768
           rho |  .48666908   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

765 . estimates store rg_3

766 .
767 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio if icbindustryname=="Health Care", vce(robus
    > t)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =       337
    Group variable: ric                             Number of groups  =        70

    R-sq:                                           Obs per group:
         within  = 0.2070                                         min =         2
         between = 0.3951                                         avg =       4.8
         overall = 0.3165                                         max =         5

                                                    Wald chi2(11)     =     88.90
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 70 clusters in r
    > ic)
    -------------+----------------------------------------------------------------
    > ----
                 |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ----
      _Iyear_2016 |  -.0002622   .0144516    -0.02   0.986    -.0285868    .0280
    > 624
      _Iyear_2017 |  -.0347865    .012758    -2.73   0.006    -.0597917   -.0097
    > 814
      _Iyear_2018 |   .0273444   .0169465     1.61   0.107    -.0058701    .0605
    > 589
      _Iyear_2019 |   .0885465   .0180618     4.90   0.000      .053146     .123
    > 947
      dummy_ESGAA |  -.0668434   .0280101    -2.39   0.017    -.1217421   -.0119
```

```
> 447
    dummy_ESGBB |  -.0256003   .0257337    -0.99   0.320    -.0760375    .0248
> 368
    dummy_ESGCC |   .0012171   .0247069     0.05   0.961    -.0472076    .0496
> 418
         mktcap |  -8.95e-07   2.29e-07    -3.91   0.000    -1.34e-06   -4.46e
> -07
        debtequ |   .0053969   .0013372     4.04   0.000     .0027761    .0080
> 177
revenuepershare |  -.0000295   .0001437    -0.21   0.837    -.0003112    .0002
> 522
   currentratio |   .0183717   .0059229     3.10   0.002      .006763    .0299
> 805
          _cons |   .2816995   .0300296     9.38   0.000     .2228426    .3405
> 564
----------------+------------------------------------------------------------
> ----
        sigma_u |  .08948301
        sigma_e |  .09292758
            rho |  .48112313   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

768 . estimates store rg_4

769 .
770 . ** Average returns-rf
771 .
772 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Health Care", vce(robust)

Linear regression                               Number of obs     =        333
                                                F(7, 325)         =       4.52
                                                Prob > F          =     0.0001
                                                R-squared         =     0.0848
                                                Root MSE          =     .30487

----------------+------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+------------------------------------------------------------
> ----
     dummy_ESGA |   .0694754   .0606441     1.15   0.253    -.0498292    .1887
> 799
     dummy_ESGB |   .0443652    .056067     0.79   0.429    -.0659348    .1546
> 651
     dummy_ESGC |   .0147554   .0583597     0.25   0.801    -.1000551    .1295
```

```
> 659
         mktcap |   1.88e-07   2.13e-07     0.88   0.378    -2.31e-07    6.07e
> -07
       debtequ |  -.0162913   .0038539    -4.23   0.000     -.023873   -.0087
> 096
revenuepershare |  -.0002017   .0002309    -0.87   0.383    -.0006559    .0002
> 526
   currentratio |   .0134719   .0110039     1.22   0.222    -.0081759    .0351
> 197
         _cons |   .0800799   .0627659     1.28   0.203    -.0433987    .2035
> 585
---------------+------------------------------------------------------------
> ----

773 . estimates store rg_5

774 .
775 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Health Care", vce(robust)

Linear regression                               Number of obs     =        333
                                                F(7, 325)         =       4.76
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0868
                                                Root MSE          =     .30454

---------------+------------------------------------------------------------
> ----
               |               Robust
    returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
---------------+------------------------------------------------------------
> ----
   dummy_ESGAA |   .1031706   .0642414     1.61   0.109    -.0232108    .2295
> 521
   dummy_ESGBB |   .0331729   .0556643     0.60   0.552    -.0763348    .1426
> 807
   dummy_ESGCC |   .0158154   .0577513     0.27   0.784    -.0977982     .129
> 429
         mktcap |   2.93e-07   1.98e-07     1.48   0.141    -9.73e-08    6.82e
> -07
       debtequ |  -.0162461   .0038012    -4.27   0.000    -.0237241    -.008
> 768
revenuepershare |  -.0001969   .0002353    -0.84   0.403    -.0006599    .0002
> 661
   currentratio |   .0129448   .0109671     1.18   0.239    -.0086307    .0345
> 203
         _cons |   .0819305   .0627105     1.31   0.192    -.0414393    .2053
> 002
```

```
-------------------+------------------------------------------------------------------------------
> ----

776 . estimates store rg_6

777 .
778 . **Treynor Ratio
779 .
780 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Health Care", vce(robust)

Linear regression                               Number of obs     =        324
                                                F(7, 316)         =       8.21
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1033
                                                Root MSE          =     .32354

-------------------+------------------------------------------------------------------------------
> ----
                   |               Robust
     TreynorRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------------+------------------------------------------------------------------------------
> ----
       dummy_ESGA  |   .0422879   .0618737     0.68   0.495    -.0794486    .1640
> 245
       dummy_ESGB  |   .0954551   .0550868     1.73   0.084    -.0129282    .2038
> 384
       dummy_ESGC  |   .0277176   .0594433     0.47   0.641    -.0892371    .1446
> 723
            mktcap |   5.66e-07   2.99e-07     1.89   0.060    -2.33e-08    1.15e
> -06
          debtequ  |  -.0146247   .0026807    -5.46   0.000    -.0198989   -.0093
> 504
revenuepershare    |  -.0002143   .0002143    -1.00   0.318    -.0006359    .0002
> 074
     currentratio  |   .0313934   .0135145     2.32   0.021     .0048037    .0579
> 831
           _cons   |   .0326755   .0643935     0.51   0.612    -.0940187    .1593
> 697
-------------------+------------------------------------------------------------------------------
> ----
```

```
781 . estimates store rg_7

782 .
783 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Health Care", vce(robust)

    Linear regression                               Number of obs     =        324
                                                    F(7, 316)         =       8.49
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1039
                                                    Root MSE          =     .32343

------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |   .0727159   .0617234     1.18   0.240    -.0487249    .1941
> 567
  dummy_ESGBB |   .0939508   .0555842     1.69   0.092    -.0154111    .2033
> 127
  dummy_ESGCC |   .0243628   .0586802     0.42   0.678    -.0910904     .139
> 816
       mktcap |   5.63e-07   2.48e-07     2.27   0.024     7.58e-08    1.05e
> -06
      debtequ |   -.014512   .0026479    -5.48   0.000    -.0197217   -.0093
> 022
revenuepershare |  -.0001858     .00022    -0.84   0.399    -.0006187    .0002
> 471
 currentratio |    .031286    .013528     2.31   0.021     .0046697    .0579
> 023
        _cons |   .0322462   .0644215     0.50   0.617     -.094503    .1589
> 954
------------------------------------------------------------------------------
> ----
```

```
784 . estimates store rg_8

785 .
786 .
787 . esttab rg_1 rg_2 rg_7 rg_8 rg_3 rg_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

788 . esttab rg_1 rg_2 rg_7 rg_8 rg_3 rg_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ____________________________________________________________________________
    > ________________________________
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                  SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ____________________________________________________________________________
    > ________________________________
    dummy_ESGA          0.600**                         0.0423
    >     -0.0639**
                       (0.248)                         (0.0619)
    >    (0.0303)

    dummy_ESGB          0.343*                          0.0955*
    >     -0.0225
                       (0.176)                         (0.0551)
    >    (0.0254)

    dummy_ESGC          0.133                           0.0277
    >   0.0000189
                       (0.161)                         (0.0594)
    >    (0.0248)

    mktcap         0.00000120      0.00000208**   0.000000566*    0.000000563**  -
    > 0.000000777*** -0.000000895***
                  (0.00000111)    (0.000000960)    (0.000000299)    (0.000000248)
    >   (0.000000258)    (0.000000229)

    debtequ           -0.0433***      -0.0430***      -0.0146***      -0.0145***
    >     0.00537***      0.00540***
                     (0.0139)        (0.0138)        (0.00268)       (0.00265)
    >   (0.00132)       (0.00134)

    revenueper~e    -0.000989       -0.000893       -0.000214       -0.000186
    >  -0.0000203      -0.0000295
                    (0.000685)      (0.000708)      (0.000214)      (0.000220)
    >  (0.000141)      (0.000144)
```

```
currentratio      0.00538         0.00488          0.0314**        0.0313**
>      0.0181***       0.0184***
                  (0.0296)        (0.0294)        (0.0135)        (0.0135)
>   (0.00604)       (0.00592)

dummy_ESGAA                         0.752***                        0.0727
>                    -0.0668**
                                    (0.278)                         (0.0617)
>                    (0.0280)

dummy_ESGBB                         0.325*                          0.0940*
>                    -0.0256
                                    (0.174)                         (0.0556)
>                    (0.0257)

dummy_ESGCC                         0.118                           0.0244
>                     0.00122
                                    (0.158)                         (0.0587)
>                    (0.0247)

_Iyear_2016
>     0.00111       -0.000262

>    (0.0145)        (0.0145)

_Iyear_2017
>     -0.0347***      -0.0348***

>    (0.0129)        (0.0128)

_Iyear_2018
>      0.0277          0.0273

>    (0.0170)        (0.0169)

_Iyear_2019
>      0.0910***       0.0885***

>    (0.0188)        (0.0181)
```

```
    _cons                0.377**         0.374**         0.0327          0.0322
    >       0.280***         0.282***
                        (0.181)         (0.180)         (0.0644)        (0.0644)
    >    (0.0305)         (0.0300)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                      333             333             324             324
    >         337              337
    R-sq                 0.091           0.099           0.103           0.104
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

789 .
790 . ** Graph
791 .
792 . twoway (qfit returns_rf esg if icbindustryname=="Health Care", legend(label(
    > 1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Health Care", legend(l
    > abel(2 ESG Combined))), title("Health Care: Excess Returns per ESG Score")

793 . graph export HealthCare.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/HealthCare.pdf written in PDF format)

794 .
795 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Health Care"), title("Healt
    > h Care: ESG & Excess Returns")
    > graph export HealthCare_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Health Care"), title("H
    > ealth Care: ESG Combined & Excess Returns")
    > graph export HealthCare_ESGcomb.pdf,replace
    > */
796 .
```

```
797 . ////////////Regressions for Industrials (15-16) H //////////////
    >
798 . //Fama-French 3 Factor
799 .
800 . ** ESG
801 .
802 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     103.73
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3248
                                                    Root MSE          =      .2997

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.34495   .1146836    11.73   0.000     1.119942    1.569957
         SMB |   1.010036   .5829431     1.73   0.083    -.1336898    2.153761
         HML |   .1082169   .1792596     0.60   0.546    -.2434878    .4599215
  dummy_ESGA |   -.010886   .0365655    -0.30   0.766    -.0826271     .060855
  dummy_ESGB |  -.0260371   .0254874    -1.02   0.307     -.076043    .0239688
  dummy_ESGC |  -.0299309   .0248297    -1.21   0.228    -.0786464    .0187846
       _cons |   .0339325   .0259793     1.31   0.192    -.0170385    .0849034
------------------------------------------------------------------------------

803 . estimates store r15_1

804 .
805 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     104.55
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3248
                                                    Root MSE          =      .2997
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.345821**	**.1151049**	**11.69**	**0.000**	**1.119987**	**1.571655**
SMB	**.9880078**	**.5885328**	**1.68**	**0.093**	**-.1666847**	**2.1427**
HML	**.1136112**	**.1806732**	**0.63**	**0.530**	**-.2408669**	**.4680893**
dummy_ESGB	**-.0163157**	**.0285114**	**-0.57**	**0.567**	**-.0722546**	**.0396232**
dummy_ESGC	**-.0201674**	**.0282134**	**-0.71**	**0.475**	**-.0755218**	**.0351869**
dummy_ESGD	**.0113173**	**.0339682**	**0.33**	**0.739**	**-.0553279**	**.0779624**
_cons	**.0238211**	**.0318208**	**0.75**	**0.454**	**-.0386109**	**.0862531**

```
806 . estimates store r16_1

807 .
808 . ** ESG combined
809 .
810 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Industrials", vce(robust)

Linear regression                               Number of obs     =      1,182
                                                F(6, 1175)        =     105.20
                                                Prob > F          =     0.0000
                                                R-squared         =     0.3250
                                                Root MSE          =     .29965
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.344727**	**.114587**	**11.74**	**0.000**	**1.119909**	**1.569545**
SMB	**.9987514**	**.581473**	**1.72**	**0.086**	**-.1420899**	**2.139593**
HML	**.1092008**	**.1789607**	**0.61**	**0.542**	**-.2419174**	**.4603191**
dummy_ESGAA	**.0218281**	**.0405674**	**0.54**	**0.591**	**-.0577645**	**.1014207**
dummy_ESGBB	**-.0291517**	**.0255885**	**-1.14**	**0.255**	**-.0793559**	**.0210524**
dummy_ESGCC	**-.022989**	**.0245743**	**-0.94**	**0.350**	**-.0712035**	**.0252255**
_cons	**.0301139**	**.0256498**	**1.17**	**0.241**	**-.0202107**	**.0804384**

```
811 . estimates store r15_2

812 .
813 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     105.59
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3249
                                                    Root MSE          =     .29968

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   1.345226   .115049    11.69   0.000     1.119501    1.57095
         SMB |   1.014794   .5878532     1.73   0.085     -.138565    2.168153
         HML |   .1054538   .180588     0.58   0.559    -.2488572    .4597648
 dummy_ESGBB |  -.0380199   .0309595   -1.23   0.220     -.098762    .0227222
 dummy_ESGCC |  -.0318591   .0303503   -1.05   0.294    -.0914059    .0276877
 dummy_ESGDD |  -.0079923    .035891   -0.22   0.824    -.0784098    .0624252
       _cons |   .0391296   .0340274    1.15   0.250    -.0276316    .1058908
------------------------------------------------------------------------------

814 . estimates store r16_2

815 .
816 . ** E
817 .
818 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     104.93
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3277
                                                    Root MSE          =     .29905
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.347719**	**.1127841**	**11.95**	**0.000**	**1.126438**	**1.569**
SMB	**.9464849**	**.5774602**	**1.64**	**0.101**	**-.1864834**	**2.079453**
HML	**.1215964**	**.1778494**	**0.68**	**0.494**	**-.2273414**	**.4705341**
dummy_EA	**.0316976**	**.0250322**	**1.27**	**0.206**	**-.0174152**	**.0808105**
dummy_EB	**.0016009**	**.0221772**	**0.07**	**0.942**	**-.0419104**	**.0451122**
dummy_EC	**-.0368815**	**.0227601**	**-1.62**	**0.105**	**-.0815364**	**.0077734**
_cons	**.0140201**	**.0225585**	**0.62**	**0.534**	**-.0302392**	**.0582795**

```
819 . estimates store r15_3

820 .
821 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Industrials", vce(robust)
```

Linear regression

Number of obs	=	**1,182**
F(6, 1175)	=	**105.81**
Prob > F	=	**0.0000**
R-squared	=	**0.3276**
Root MSE	=	**.29906**

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.346084**	**.1127988**	**11.93**	**0.000**	**1.124775**	**1.567393**
SMB	**1.007932**	**.5814085**	**1.73**	**0.083**	**-.1327828**	**2.148647**
HML	**.1066947**	**.1790944**	**0.60**	**0.551**	**-.2446859**	**.4580752**
dummy_EB	**-.0266588**	**.0237893**	**-1.12**	**0.263**	**-.073333**	**.0200154**
dummy_EC	**-.0651952**	**.024306**	**-2.68**	**0.007**	**-.1128832**	**-.0175071**
dummy_ED	**-.0295259**	**.0244381**	**-1.21**	**0.227**	**-.0774731**	**.0184212**
_cons	**.0433154**	**.0253986**	**1.71**	**0.088**	**-.0065163**	**.093147**

```
822 . estimates store r16_3

823 .
824 . ** S
825 .
826 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     103.77
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3249
                                                    Root MSE          =     .29968

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.343301   .1141761    11.77   0.000     1.119289    1.567312
         SMB |    1.000098   .5819197     1.72   0.086    -.1416196    2.141816
         HML |    .1117754   .1793136     0.62   0.533    -.2400352    .4635859
    dummy_SA |    .0118101   .0291542     0.41   0.685      -.04539    .0690102
    dummy_SB |   -.0298466   .0238354    -1.25   0.211    -.0766112     .016918
    dummy_SC |   -.0060812   .0234935    -0.26   0.796    -.0521752    .0400127
       _cons |    .0214993   .0245312     0.88   0.381    -.0266307    .0696292
------------------------------------------------------------------------------

827 . estimates store r15_4

828 .
829 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     104.55
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3249
                                                    Root MSE          =     .29968
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.342837**	**.114486**	**11.73**	**0.000**	**1.118217**	**1.567457**
SMB	**1.020069**	**.5865811**	**1.74**	**0.082**	**-.1307939**	**2.170933**
HML	**.1067849**	**.1806182**	**0.59**	**0.554**	**-.2475852**	**.461155**
dummy_SB	**-.0396363**	**.0251912**	**-1.57**	**0.116**	**-.089061**	**.0097884**
dummy_SC	**-.0158706**	**.0250051**	**-0.63**	**0.526**	**-.0649303**	**.0331891**
dummy_SD	**-.0105963**	**.028602**	**-0.37**	**0.711**	**-.0667131**	**.0455205**
_cons	**.0315666**	**.0280664**	**1.12**	**0.261**	**-.0234992**	**.0866325**

```
830 . estimates store r16_4

831 .
832 . ** G
833 .
834 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Industrials", vce(robust)
```

Linear regression

Number of obs	=	**1,182**
F(6, 1175)	=	**102.63**
Prob > F	=	**0.0000**
R-squared	=	**0.3257**
Root MSE	=	**.29949**

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.340525**	**.1138438**	**11.78**	**0.000**	**1.117165**	**1.563885**
SMB	**.9825507**	**.5799951**	**1.69**	**0.091**	**-.155391**	**2.120492**
HML	**.1188357**	**.1784495**	**0.67**	**0.506**	**-.2312796**	**.4689509**
dummy_GA	**-.0015759**	**.0333593**	**-0.05**	**0.962**	**-.0670264**	**.0638745**
dummy_GB	**.0069505**	**.0294575**	**0.24**	**0.814**	**-.0508445**	**.0647456**
dummy_GC	**.0382181**	**.0307289**	**1.24**	**0.214**	**-.0220715**	**.0985076**
_cons	**-.0013172**	**.0311132**	**-0.04**	**0.966**	**-.0623607**	**.0597264**

```
835 . estimates store r15_5

836 .
837 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,182
                                                    F(6, 1175)        =     103.45
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3258
                                                    Root MSE          =     .29947

    ------------------------------------------------------------------------------
                 |               Robust
      returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
    -------------+----------------------------------------------------------------
           mktrf |   1.337605   .1141497    11.72   0.000     1.113645    1.561565
             SMB |   1.000408   .5828777     1.72   0.086    -.1431894    2.144005
             HML |   .1152832    .178841     0.64   0.519    -.2356001    .4661666
        dummy_GB |   .0025706   .0223531     0.12   0.908    -.0412858     .046427
        dummy_GC |   .0338323     .02428     1.39   0.164    -.0138047    .0814693
        dummy_GD |  -.0127371   .0364879    -0.35   0.727    -.0843258    .0588517
           _cons |   .0036573   .0266661     0.14   0.891    -.0486612    .0559758
    ------------------------------------------------------------------------------

838 . estimates store r16_5

839 .
840 . ** Final
841 .
842 . esttab r15_1 r15_2 r15_3 r15_4 r15_5 using FF_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

843 . esttab r15_1 r15_2 r15_3 r15_4 r15_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------
                          (1)             (2)             (3)             (4)
    >         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
    ------------------------------------------------------------------------------
    > ------------
    mktrf               1.345***        1.345***        1.348***        1.343***
    >       1.341***
                       (0.115)         (0.115)         (0.113)         (0.114)
    >     (0.114)
```

SMB	1.010*	0.999*	0.946	1.000*	0.983*
	(0.583)	(0.581)	(0.577)	(0.582)	(0.580)
HML	0.108	0.109	0.122	0.112	0.119
	(0.179)	(0.179)	(0.178)	(0.179)	(0.178)
dummy_ESGA	-0.0109				
	(0.0366)				
dummy_ESGB	-0.0260				
	(0.0255)				
dummy_ESGC	-0.0299				
	(0.0248)				
dummy_ESGAA		0.0218			
		(0.0406)			
dummy_ESGBB		-0.0292			
		(0.0256)			
dummy_ESGCC		-0.0230			
		(0.0246)			
dummy_EA			0.0317		
			(0.0250)		

dummy_EB	0.00160		
	(0.0222)		
dummy_EC	-0.0369		
	(0.0228)		
dummy_SA		0.0118	
		(0.0292)	
dummy_SB		-0.0298	
		(0.0238)	
dummy_SC		-0.00608	
		(0.0235)	
dummy_GA	-0.00158		
	(0.0334)		
dummy_GB	0.00695		
	(0.0295)		
dummy_GC	0.0382		
	(0.0307)		

```
_cons              0.0339          0.0301          0.0140          0.0215
>    -0.00132
                  (0.0260)        (0.0256)        (0.0226)        (0.0245)
>    (0.0311)
------------------------------------------------------------------------------
> ──────────────
N                    1182            1182            1182            1182
>        1182
R-sq                0.325           0.325           0.328           0.325
>       0.326
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

844 . esttab r16_1 r16_2 r16_3 r16_4 r16_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf              1.346***        1.345***        1.346***        1.343***
>       1.338***
                  (0.115)         (0.115)         (0.113)         (0.114)
>     (0.114)

SMB                0.988*          1.015*          1.008*          1.020*
>       1.000*
                  (0.589)         (0.588)         (0.581)         (0.587)
>     (0.583)

HML                0.114           0.105           0.107           0.107
>       0.115
                  (0.181)         (0.181)         (0.179)         (0.181)
>     (0.179)

dummy_ESGB        -0.0163
>
                  (0.0285)
>
```

dummy_ESGC	-0.0202				
	(0.0282)				
dummy_ESGD	0.0113				
	(0.0340)				
dummy_ESGBB		-0.0380			
		(0.0310)			
dummy_ESGCC		-0.0319			
		(0.0304)			
dummy_ESGDD		-0.00799			
		(0.0359)			
dummy_EB			-0.0267		
			(0.0238)		
dummy_EC			-0.0652***		
			(0.0243)		
dummy_ED			-0.0295		
			(0.0244)		
dummy_SB				-0.0396	
				(0.0252)	

dummy_SC				-0.0159
				(0.0250)
dummy_SD				-0.0106
				(0.0286)
dummy_GB	0.00257			
	(0.0224)			
dummy_GC	0.0338			
	(0.0243)			
dummy_GD	-0.0127			
	(0.0365)			
_cons	0.0238	0.0391	0.0433*	0.0316
	0.00366			
	(0.0318)	(0.0340)	(0.0254)	(0.0281)
	(0.0267)			
N	1182	1182	1182	1182
	1182			
R-sq	0.325	0.325	0.328	0.325
	0.326			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
845 .
846 . //Sharpe Ratio
847 .
848 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,074
                                                    F(7, 1066)        =       7.96
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0493
                                                    Root MSE          =     1.2147

    ----------------+------------------------------------------------------------------------------
    > ---
                    |               Robust
        SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ----------------+------------------------------------------------------------------------------
    > ---
         dummy_ESGA |   .2816297   .2038216     1.38   0.167    -.1183073    .6815
    > 668
         dummy_ESGB |   .1274624   .1139869     1.12   0.264    -.0962018    .3511
    > 266
         dummy_ESGC |   .1735335   .0945662     1.84   0.067    -.0120236    .3590
    > 906
             mktcap |   7.85e-06   1.43e-06     5.48   0.000     5.04e-06    .0000
    > 107
            debtequ |  -.0146209   .0045638    -3.20   0.001     -.023576   -.0056
    > 657
    revenuepershare |  -.0014998   .0006466    -2.32   0.021    -.0027686   -.0002
    > 309
       currentratio |   -.013342   .0246108    -0.54   0.588    -.0616332    .0349
    > 491
              _cons |   .4086621   .1015913     4.02   0.000     .2093205    .6080
    > 037
    ----------------+------------------------------------------------------------------------------
    > ---
```

```
849 . estimates store rh_1

850 .
851 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
    > uepershare currentratio if icbindustryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,074
                                                    F(7, 1066)        =       8.30
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0509
                                                    Root MSE          =     1.2137

    ------------------------------------------------------------------------------
    > ---
                 |               Robust
    SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ---
    dummy_ESGAA |   .4436657   .2220936     2.00   0.046     .0078755    .8794
    > 559
    dummy_ESGBB |   .1384755   .1114628     1.24   0.214     -.080236     .357
    > 187
    dummy_ESGCC |   .1686629   .0937027     1.80   0.072    -.0151997    .3525
    > 255
         mktcap |   7.71e-06   1.36e-06     5.66   0.000     5.04e-06    .0000
    > 104
        debtequ |  -.0142637   .0045199    -3.16   0.002    -.0231326   -.0053
    > 949
revenuepershare |  -.0015389   .0006434    -2.39   0.017    -.0028015   -.0002
    > 764
   currentratio |  -.0123688   .0246271    -0.50   0.616     -.060692    .0359
    > 544
          _cons |   .4049913   .1003965     4.03   0.000     .2079941    .6019
    > 884
    ------------------------------------------------------------------------------
    > ---
```

```
852 . estimates store rh_2

853 .
854 . ** STD regression
855 .
856 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Industrials", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =      1,093
    Group variable: ric                             Number of groups  =        229

    R-sq:                                           Obs per group:
         within  = 0.2164                                         min =          1
         between = 0.1882                                         avg =        4.8
         overall = 0.1989                                         max =          5

                                                    Wald chi2(11)     =     255.62
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                       (Std. Err. adjusted for 229 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0616194   .0086443     7.13   0.000     .0446769     .078
    > 562
        _Iyear_2017 |   -.024817   .0085103    -2.92   0.004    -.0414968   -.0081
    > 372
        _Iyear_2018 |   .0308018    .008741     3.52   0.000     .0136696    .0479
    > 339
        _Iyear_2019 |   .1028158   .0096373    10.67   0.000      .083927    .1217
    > 046
         dummy_ESGA |  -.0824645   .0153866    -5.36   0.000    -.1126218   -.0523
    > 073
         dummy_ESGB |  -.0568274   .0122825    -4.63   0.000    -.0809006   -.0327
    > 541
         dummy_ESGC |  -.0239322   .0097348    -2.46   0.014     -.043012   -.0048
    > 525
             mktcap |  -8.69e-07   2.18e-07    -3.99   0.000    -1.30e-06   -4.42e
    > -07
            debtequ |   .0001733   .0008001     0.22   0.829    -.0013949    .0017
    > 415
    revenuepershare |   .0001522   .0001146     1.33   0.184    -.0000725    .0003
    > 769
```

```
   currentratio |  -.0045795   .0051124    -0.90   0.370    -.0145995    .0054
> 406
         _cons |    .311716   .0165632    18.82   0.000     .2792528    .3441
> 792
-------------------------------------------------------------------------------
> ----
       sigma_u |  .08586267
       sigma_e |  .09062153
           rho |  .47305478   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
> ----

857 . estimates store rh_3

858 .
859 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio if icbindustryname=="Industrials", vce(robus
    > t)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =      1,093
    Group variable: ric                             Number of groups  =        229

    R-sq:                                           Obs per group:
         within  = 0.2182                                         min =          1
         between = 0.1937                                         avg =        4.8
         overall = 0.2032                                         max =          5

                                                    Wald chi2(11)     =     252.91
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                       (Std. Err. adjusted for 229 clusters in r
    > ic)
    -------------------------------------------------------------------------------
    > ----
                 |               Robust
      sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    -------------------------------------------------------------------------------
    > ----
     _Iyear_2016 |     .06313   .0088014     7.17   0.000     .0458795    .0803
    > 805
     _Iyear_2017 |  -.0232182   .0086237    -2.69   0.007    -.0401203   -.0063
    > 161
     _Iyear_2018 |   .0318298     .00873     3.65   0.000     .0147193    .0489
    > 403
     _Iyear_2019 |    .104214   .0097865    10.65   0.000     .0850328    .1233
    > 953
     dummy_ESGAA |  -.0865749   .0165014    -5.25   0.000    -.1189171   -.0542
```

```
> 327
    dummy_ESGBB |  -.0604754   .0132781    -4.55   0.000    -.0864999   -.0344
> 508
    dummy_ESGCC |  -.0324356   .0108728    -2.98   0.003     -.053746   -.0111
> 253
         mktcap |  -9.43e-07   2.15e-07    -4.39   0.000    -1.36e-06   -5.21e
> -07
        debtequ |   .0001574   .0008055     0.20   0.845    -.0014214    .0017
> 361
revenuepershare |   .0001454   .0001173     1.24   0.215    -.0000846    .0003
> 754
   currentratio |  -.0044372   .0051185    -0.87   0.386    -.0144693    .0055
> 949
          _cons |   .3158293   .0169685    18.61   0.000     .2825717    .3490
> 868
----------------+----------------------------------------------------------------
> ----
        sigma_u |  .08567997
        sigma_e |   .0905224
            rho |  .47253853   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

860 . estimates store rh_4

861 .
862 . ** Average returns-rf
863 .
864 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Industrials", vce(robust)

Linear regression                               Number of obs     =      1,076
                                                F(7, 1068)        =       4.93
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0162
                                                Root MSE          =     .36053

----------------+----------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+----------------------------------------------------------------
> ----
    dummy_ESGA |   .0249389   .0497435     0.50   0.616    -.0726673     .122
> 545
    dummy_ESGB |   .0102098    .034865     0.29   0.770    -.0582018    .0786
> 215
    dummy_ESGC |   .0186462   .0316197     0.59   0.556    -.0433976      .08
```

```
> 069
         mktcap |   1.11e-06   2.81e-07     3.96   0.000     5.62e-07    1.67e
> -06
        debtequ |  -.0037825   .0014018    -2.70   0.007    -.0065331    -.001
> 032
revenuepershare |  -.0004506   .0001969    -2.29   0.022    -.0008369   -.0000
> 643
   currentratio |   -.006312   .0070343    -0.90   0.370    -.0201147    .0074
> 906
          _cons |   .1417546   .0347457     4.08   0.000     .0735771    .2099
> 322
---------------+----------------------------------------------------------------
> ----

865 . estimates store rh_5

866 .
867 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Industrials", vce(robust)

Linear regression                               Number of obs     =      1,076
                                                F(7, 1068)        =       5.13
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0168
                                                Root MSE          =     .36042

---------------+----------------------------------------------------------------
> ----
               |               Robust
    returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
---------------+----------------------------------------------------------------
> ----
   dummy_ESGAA |   .0590355    .054616     1.08   0.280    -.0481312    .1662
> 023
   dummy_ESGBB |   .0117623   .0340577     0.35   0.730    -.0550653    .0785
> 898
   dummy_ESGCC |   .0202951   .0313009     0.65   0.517    -.0411232    .0817
> 134
         mktcap |   1.08e-06   2.62e-07     4.12   0.000     5.67e-07    1.60e
> -06
        debtequ |  -.0037287   .0014019    -2.66   0.008    -.0064794   -.0009
> 779
revenuepershare |  -.0004588   .0001951    -2.35   0.019    -.0008416    -.000
> 076
   currentratio |  -.0060686    .007024    -0.86   0.388     -.019851    .0077
> 139
          _cons |   .1395561   .0343396     4.06   0.000     .0721755    .2069
> 368
```

```
-----------------+------------------------------------------------------------------------------
> ----

868 . estimates store rh_6

869 .
870 . **Treynor Ratio
871 .
872 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Industrial", vce(robust)

Linear regression                               Number of obs     =      1,046
                                                F(7, 1038)        =       5.78
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0216
                                                Root MSE          =     .31232

-----------------+------------------------------------------------------------------------------
> ----
                 |               Robust
   TreynorRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-----------------+------------------------------------------------------------------------------
> ----
     dummy_ESGA  |   .0718266   .0537647     1.34   0.182    -.0336733     .1773
> 266
     dummy_ESGB  |   .0218912   .0302213     0.72   0.469    -.0374105      .081
> 193
     dummy_ESGC  |    .022653   .0262706     0.86   0.389    -.0288966     .0742
> 026
         mktcap  |   9.78e-07   2.58e-07     3.79   0.000     4.72e-07    1.48e
> -06
        debtequ  |  -.0026265   .0015377    -1.71   0.088    -.0056439     .0003
> 908
revenuepershare  |  -.0005207   .0001762    -2.96   0.003    -.0008664    -.0001
> 749
   currentratio  |  -.0068104   .0059374    -1.15   0.252    -.0184612     .0048
> 403
           _cons |   .1294359    .028696     4.51   0.000     .0731272     .1857
> 447
-----------------+------------------------------------------------------------------------------
> ----
```

```
873 . estimates store rh_7

874 .
875 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Industrials", vce(robust)

    Linear regression                               Number of obs     =      1,046
                                                    F(7, 1038)        =       6.08
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.0239
                                                    Root MSE          =     .31195

    ------------------------------------------------------------------------------
    > ----
                 |               Robust
    TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ----
      dummy_ESGAA |    .115288   .0613908     1.88   0.061    -.0051761    .2357
    > 521
      dummy_ESGBB |   .0231385   .0293907     0.79   0.431    -.0345334    .0808
    > 104
      dummy_ESGCC |     .02443    .025965     0.94   0.347    -.0265198    .0753
    > 799
           mktcap |  9.79e-07   2.35e-07     4.16   0.000     5.17e-07    1.44e
    > -06
         debtequ |  -.0024977   .0015297    -1.63   0.103    -.0054994     .000
    > 504
    revenuepershare |  -.0005232   .0001736    -3.01   0.003    -.0008639   -.0001
    > 826
     currentratio |  -.0065369   .0059233    -1.10   0.270    -.0181599    .0050
    > 861
           _cons |   .1266365   .0282911     4.48   0.000     .0711222    .1821
    > 509
    ------------------------------------------------------------------------------
    > ----
```

```
876 . estimates store rh_8

877 .
878 . esttab rh_1 rh_2 rh_7 rh_8 rh_3 rh_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

879 . esttab rh_1 rh_2 rh_7 rh_8 rh_3 rh_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ------------------------------------------------------------------------------
    > ------------------------------
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                   SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ------------------------------------------------------------------------------
    > ------------------------------
    dummy_ESGA          0.282                           0.0718
    >     -0.0825***
                       (0.204)                         (0.0538)
    >    (0.0154)

    dummy_ESGB          0.127                           0.0219
    >     -0.0568***
                       (0.114)                         (0.0302)
    >    (0.0123)

    dummy_ESGC          0.174*                          0.0227
    >     -0.0239**
                      (0.0946)                         (0.0263)
    >   (0.00973)

    mktcap         0.00000785***   0.00000771***  0.000000978***  0.000000979*** -
    > 0.000000869*** -0.000000943***
                  (0.00000143)    (0.00000136)    (0.000000258)    (0.000000235)
    >  (0.000000218)    (0.000000215)

    debtequ           -0.0146***      -0.0143***     -0.00263*       -0.00250
    >    0.000173        0.000157
                     (0.00456)       (0.00452)       (0.00154)       (0.00153)
    >  (0.000800)      (0.000805)

    revenueper~e     -0.00150**      -0.00154**     -0.000521***    -0.000523***
    >    0.000152        0.000145
                    (0.000647)      (0.000643)      (0.000176)      (0.000174)
    >  (0.000115)      (0.000117)
```

```
currentratio      -0.0133         -0.0124        -0.00681        -0.00654
>    -0.00458        -0.00444
                  (0.0246)        (0.0246)       (0.00594)       (0.00592)
>   (0.00511)       (0.00512)

dummy_ESGAA                         0.444**                         0.115*
>                   -0.0866***
                                    (0.222)                         (0.0614)
>                   (0.0165)

dummy_ESGBB                         0.138                           0.0231
>                   -0.0605***
                                    (0.111)                         (0.0294)
>                   (0.0133)

dummy_ESGCC                         0.169*                          0.0244
>                   -0.0324***
                                   (0.0937)                         (0.0260)
>                   (0.0109)

_Iyear_2016
>      0.0616***       0.0631***

>   (0.00864)       (0.00880)

_Iyear_2017
>     -0.0248***      -0.0232***

>   (0.00851)       (0.00862)

_Iyear_2018
>      0.0308***       0.0318***

>   (0.00874)       (0.00873)

_Iyear_2019
>       0.103***        0.104***

>   (0.00964)       (0.00979)
```

```
    _cons                0.409***        0.405***        0.129***        0.127***
    >       0.312***        0.316***
                        (0.102)         (0.100)         (0.0287)        (0.0283)
    >    (0.0166)        (0.0170)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                       1074            1074            1046            1046
    >        1093            1093
    R-sq                 0.049           0.051           0.022           0.024
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

880 .
881 . ** Graph
882 .
883 . twoway (qfit returns_rf esg if icbindustryname=="Industrials", legend(label(
    > 1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Industrials", legend(l
    > abel(2 ESG Combined))), title("Industrials: Excess Returns per ESG Score")

884 . graph export Industrials.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/Industrials.pdf written in PDF format)

885 .
886 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Industrials"), title("Indus
    > trials: ESG & Excess Returns")
    > graph export Industrials_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Industrials"), title("I
    > ndustrials: ESG Combined & Excess Returns")
    > graph export Industrials_ESGcomb.pdf,replace
    > */
887 .
```

```
888 . ////////////Regressions for Real Estate (17-18) I //////////////
    >
889 . //Fama-French 3 Factor
890 .
891 . ** ESG
892 .
893 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      47.41
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2976
                                                    Root MSE          =     .19697

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.221164   .0991137    12.32   0.000     1.026557     1.41577
         SMB |   -2.257623   .4879994    -4.63   0.000    -3.215795   -1.299451
         HML |    .9521105    .145536     6.54   0.000     .6663551    1.237866
   dummy_ESGA |   -.0315539   .0420198    -0.75   0.453    -.1140585    .0509506
   dummy_ESGB |   -.0421986   .0217146    -1.94   0.052    -.0848346    .0004373
   dummy_ESGC |   -.0142199   .0206345    -0.69   0.491    -.0547351    .0262952
        _cons |   -.0403566   .0237031    -1.70   0.089     -.086897    .0061837
------------------------------------------------------------------------------

894 . estimates store r17_1

895 .
896 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      45.58
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2988
                                                    Root MSE          =      .1968
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.224856**	**.0995449**	**12.30**	**0.000**	**1.029403**	**1.420309**
SMB	**-2.375705**	**.4883579**	**-4.86**	**0.000**	**-3.334581**	**-1.41683**
HML	**.9794857**	**.1459725**	**6.71**	**0.000**	**.6928733**	**1.266098**
dummy_ESGB	**-.0129927**	**.0289421**	**-0.45**	**0.654**	**-.0698196**	**.0438343**
dummy_ESGC	**.0152914**	**.0283624**	**0.54**	**0.590**	**-.0403973**	**.0709801**
dummy_ESGD	**.0395513**	**.0333132**	**1.19**	**0.236**	**-.0258581**	**.1049607**
_cons	**-.0716248**	**.030636**	**-2.34**	**0.020**	**-.1317777**	**-.0114719**

```
897 . estimates store r18_1

898 .
899 . ** ESG combined
900 .
901 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Real Estate", vce(robust)
```

Linear regression — Number of obs = **685**; F(6, 678) = **47.54**; Prob > F = **0.0000**; R-squared = **0.2976**; Root MSE = **.19696**

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.219813**	**.0991093**	**12.31**	**0.000**	**1.025215**	**1.414411**
SMB	**-2.252882**	**.4876921**	**-4.62**	**0.000**	**-3.21045**	**-1.295313**
HML	**.950823**	**.1455056**	**6.53**	**0.000**	**.6651273**	**1.236519**
dummy_ESGAA	**-.0345321**	**.0428665**	**-0.81**	**0.421**	**-.1186992**	**.0496349**
dummy_ESGBB	**-.0419596**	**.0216207**	**-1.94**	**0.053**	**-.0844111**	**.0004919**
dummy_ESGCC	**-.0140943**	**.0206246**	**-0.68**	**0.495**	**-.0545901**	**.0264015**
_cons	**-.0401741**	**.0236958**	**-1.70**	**0.090**	**-.0867**	**.0063518**

```
902 . estimates store r17_2

903 .
904 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
    > ndustryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      45.56
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2988
                                                    Root MSE          =      .1968

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.223508   .0994623    12.30   0.000     1.028217    1.418799
         SMB |   -2.375322   .4872723    -4.87   0.000    -3.332066   -1.418578
         HML |    .9793062   .1457468     6.72   0.000     .6931369    1.265476
 dummy_ESGBB |   -.0114314   .0291388    -0.39   0.695    -.0686445    .0457817
 dummy_ESGCC |    .0167408   .0286249     0.58   0.559    -.0394633    .0729449
 dummy_ESGDD |    .0408805   .0335374     1.22   0.223    -.0249691    .1067301
       _cons |   -.072814    .030708    -2.37   0.018    -.1331082   -.0125197
------------------------------------------------------------------------------

905 . estimates store r18_2

906 .
907 . ** E
908 .
909 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
    > me=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      46.13
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2956
                                                    Root MSE          =     .19724
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	1.221717	.0999791	12.22	0.000	1.025411	1.418022
SMB	-2.31909	.488266	-4.75	0.000	-3.277785	-1.360395
HML	.9688443	.1464899	6.61	0.000	.6812158	1.256473
dummy_EA	.003403	.0182189	0.19	0.852	-.0323691	.0391752
dummy_EB	-.0244894	.0206483	-1.19	0.236	-.0650317	.016053
dummy_EC	-.017942	.0218726	-0.82	0.412	-.0608881	.0250041
_cons	-.0541783	.0185687	-2.92	0.004	-.0906372	-.0177193

```
910 . estimates store r17_3

911 .
912 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
    > me=="Real Estate", vce(robust)

Linear regression                               Number of obs     =        685
                                                F(6, 678)         =      46.10
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2956
                                                Root MSE          =     .19724
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	1.219541	.0996211	12.24	0.000	1.023938	1.415144
SMB	-2.308289	.4889937	-4.72	0.000	-3.268413	-1.348165
HML	.967051	.1461131	6.62	0.000	.6801624	1.25394
dummy_EB	-.025195	.0206392	-1.22	0.223	-.0657195	.0153294
dummy_EC	-.0186597	.0219125	-0.85	0.395	-.0616843	.0243648
dummy_ED	.0025164	.018016	0.14	0.889	-.0328575	.0378903
_cons	-.0529782	.0187894	-2.82	0.005	-.0898705	-.0160858

```
913 . estimates store r18_3

914 .
915 . ** S
916 .
917 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
    > me=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      47.51
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3018
                                                    Root MSE          =     .19637

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.226527   .0986407    12.43   0.000     1.032849    1.420205
         SMB |   -2.189307   .4872378    -4.49   0.000    -3.145983   -1.23263
         HML |    .9373974   .1452994     6.45   0.000     .6521064    1.222688
    dummy_SA |   -.030568    .0358393    -0.85   0.394    -.1009374    .0398014
    dummy_SB |   -.0635951   .0280131    -2.27   0.024    -.1185979   -.0085923
    dummy_SC |   -.0246693   .0275464    -0.90   0.371    -.0787559    .0294172
       _cons |   -.024274    .0300046    -0.81   0.419    -.0831871    .0346391
------------------------------------------------------------------------------

918 . estimates store r17_4

919 .
920 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
    > me=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      47.20
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.3057
                                                    Root MSE          =     .19582
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.231273**	**.0982814**	**12.53**	**0.000**	**1.038301**	**1.424245**
SMB	**-2.332869**	**.4844448**	**-4.82**	**0.000**	**-3.284061**	**-1.381676**
HML	**.9709034**	**.1441515**	**6.74**	**0.000**	**.6878665**	**1.25394**
dummy_SB	**-.0275258**	**.0248923**	**-1.11**	**0.269**	**-.0764012**	**.0213495**
dummy_SC	**.0113747**	**.0244719**	**0.46**	**0.642**	**-.0366751**	**.0594245**
dummy_SD	**.0750303**	**.0405689**	**1.85**	**0.065**	**-.0046254**	**.154686**
_cons	**-.0625021**	**.0278886**	**-2.24**	**0.025**	**-.1172606**	**-.0077437**

```
921 . estimates store r18_4

922 .
923 . ** G
924 .
925 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
    > me=="Real Estate", vce(robust)
```

Linear regression

Number of obs	=	**685**
F(6, 678)	=	**48.48**
Prob > F	=	**0.0000**
R-squared	=	**0.2981**
Root MSE	=	**.19689**

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	**1.215462**	**.0983431**	**12.36**	**0.000**	**1.022369**	**1.408556**
SMB	**-2.212285**	**.4916813**	**-4.50**	**0.000**	**-3.177686**	**-1.246884**
HML	**.9468465**	**.1455802**	**6.50**	**0.000**	**.6610043**	**1.232689**
dummy_GA	**-.0547205**	**.0307387**	**-1.78**	**0.075**	**-.115075**	**.0056341**
dummy_GB	**-.0142836**	**.0255319**	**-0.56**	**0.576**	**-.0644147**	**.0358474**
dummy_GC	**-.0282557**	**.0267088**	**-1.06**	**0.290**	**-.0806975**	**.0241862**
_cons	**-.0358666**	**.0291589**	**-1.23**	**0.219**	**-.0931191**	**.021386**

```
926 . estimates store r17_5

927 .
928 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
    > me=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =        685
                                                    F(6, 678)         =      45.70
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2992
                                                    Root MSE          =     .19673

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    1.218365   .0987815    12.33   0.000      1.02441    1.412319
         SMB |   -2.373931   .4850805    -4.89   0.000    -3.326371   -1.42149
         HML |    .9866707   .1450321     6.80   0.000     .7019046    1.271437
    dummy_GB |    .0316136   .0218169     1.45   0.148    -.0112232    .0744503
    dummy_GC |     .017895   .0229404     0.78   0.436    -.0271479    .0629378
    dummy_GD |    .0640167   .0347536     1.84   0.066    -.0042209    .1322542
       _cons |   -.0838508   .0245281    -3.42   0.001     -.132011   -.0356907
------------------------------------------------------------------------------

929 . estimates store r18_5

930 .
931 . ** Final
932 .
933 . esttab r17_1 r17_2 r17_3 r17_4 r17_5 using FF_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
    (output written to FF_Estimations.rtf)

934 . esttab r17_1 r17_2 r17_3 r17_4 r17_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
    > ──────────────
                        (1)             (2)             (3)             (4)
    >         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
    >  returns_rf
------------------------------------------------------------------------------
    > ──────────────
    mktrf               1.221***        1.220***        1.222***        1.227***
    >       1.215***
                       (0.0991)        (0.0991)        (0.1000)        (0.0986)
    >    (0.0983)
```

```
SMB                -2.258***       -2.253***       -2.319***       -2.189***
>      -2.212***
                   (0.488)         (0.488)         (0.488)         (0.487)
>      (0.492)

HML                 0.952***        0.951***        0.969***        0.937***
>       0.947***
                   (0.146)         (0.146)         (0.146)         (0.145)
>      (0.146)

dummy_ESGA         -0.0316
>
                  (0.0420)
>

dummy_ESGB         -0.0422*
>
                  (0.0217)
>

dummy_ESGC         -0.0142
>
                  (0.0206)
>

dummy_ESGAA                        -0.0345
>
                                  (0.0429)
>

dummy_ESGBB                        -0.0420*
>
                                  (0.0216)
>

dummy_ESGCC                        -0.0141
>
                                  (0.0206)
>

dummy_EA                                          0.00340
>
                                                 (0.0182)
>
```

dummy_EB		-0.0245	
		(0.0206)	
dummy_EC		-0.0179	
		(0.0219)	
dummy_SA			-0.0306
			(0.0358)
dummy_SB			-0.0636**
			(0.0280)
dummy_SC			-0.0247
			(0.0275)
dummy_GA	-0.0547*		
	(0.0307)		
dummy_GB	-0.0143		
	(0.0255)		
dummy_GC	-0.0283		
	(0.0267)		

```
_cons             -0.0404*        -0.0402*        -0.0542***      -0.0243
>     -0.0359
                  (0.0237)        (0.0237)        (0.0186)        (0.0300)
>    (0.0292)
------------------------------------------------------------------------------
> ──────────────
N                     685             685             685             685
>         685
R-sq                0.298           0.298           0.296           0.302
>       0.298
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

935 . esttab r18_1 r18_2 r18_3 r18_4 r18_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf               1.225***        1.224***        1.220***        1.231***
>       1.218***
                  (0.0995)        (0.0995)        (0.0996)        (0.0983)
>    (0.0988)

SMB                -2.376***       -2.375***       -2.308***       -2.333***
>      -2.374***
                   (0.488)         (0.487)         (0.489)         (0.484)
>     (0.485)

HML                 0.979***        0.979***        0.967***        0.971***
>       0.987***
                   (0.146)         (0.146)         (0.146)         (0.144)
>     (0.145)

dummy_ESGB         -0.0130
>
                  (0.0289)
>
```

dummy_ESGC	0.0153			
	(0.0284)			
dummy_ESGD	0.0396			
	(0.0333)			
dummy_ESGBB		-0.0114		
		(0.0291)		
dummy_ESGCC		0.0167		
		(0.0286)		
dummy_ESGDD		0.0409		
		(0.0335)		
dummy_EB			-0.0252	
			(0.0206)	
dummy_EC			-0.0187	
			(0.0219)	
dummy_ED			0.00252	
			(0.0180)	
dummy_SB				-0.0275
				(0.0249)

dummy_SC					0.0114
					(0.0245)
dummy_SD					0.0750*
					(0.0406)
dummy_GB	0.0316				
	(0.0218)				
dummy_GC	0.0179				
	(0.0229)				
dummy_GD	0.0640*				
	(0.0348)				
_cons	-0.0716**	-0.0728**	-0.0530***	-0.0625**	-0.0839***
	(0.0306)	(0.0307)	(0.0188)	(0.0279)	(0.0245)
N	685	685	685	685	685
R-sq	0.299	0.299	0.296	0.306	0.299

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
936 .
937 . //Sharpe Ratio
938 .
939 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
    > ershare currentratio if icbindustryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =         84
                                                    F(7, 76)          =       7.53
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2545
                                                    Root MSE          =     .97497

    ------------------------------------------------------------------------------
    > ---
                 |               Robust
    SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    -------------+----------------------------------------------------------------
    > ---
     dummy_ESGA |   .1410476   .3829075     0.37   0.714    -.6215789     .903
    > 674
     dummy_ESGB |    .448278   .3201199     1.40   0.165    -.1892961    1.085
    > 852
     dummy_ESGC |   .0420275   .3061732     0.14   0.891    -.5677692    .6518
    > 242
         mktcap |   .0000268   4.80e-06     5.59   0.000     .0000173    .0000
    > 364
        debtequ |  -.1551844   .0549622    -2.82   0.006    -.2646511   -.0457
    > 177
revenuepershare |  -.0007394   .0008869    -0.83   0.407    -.0025058    .0010
    > 269
   currentratio |  -.0770373   .0629657    -1.22   0.225    -.2024443    .0483
    > 696
          _cons |   .1218483   .3272387     0.37   0.711    -.5299041    .7736
    > 007
    ------------------------------------------------------------------------------
    > ---
```

```
940 . estimates store ri_1

941 .
942 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
    > uepershare currentratio if icbindustryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =         84
                                                    F(7, 76)          =       7.63
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.2601
                                                    Root MSE          =     .97136

    ------------------------------------------------------------------------------
    > ---
                 |               Robust
    SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
    > al]
    ------------------------------------------------------------------------------
    > ---
    dummy_ESGAA |   .0837582   .3878531     0.22   0.830    -.6887182    .8562
    > 346
    dummy_ESGBB |   .4844291   .3214475     1.51   0.136    -.1557891    1.124
    > 647
    dummy_ESGCC |   .0493509   .3009342     0.16   0.870    -.5500115    .6487
    > 133
         mktcap |   .0000266   4.88e-06     5.45   0.000     .0000169    .0000
    > 363
        debtequ |  -.1579265   .0559746    -2.82   0.006    -.2694096   -.0464
    > 434
revenuepershare |  -.0007892   .0008404    -0.94   0.351    -.0024631    .0008
    > 847
   currentratio |  -.0806336   .0631071    -1.28   0.205    -.2063223    .0450
    > 552
          _cons |   .1354501   .3279657     0.41   0.681    -.5177502    .7886
    > 503
    ------------------------------------------------------------------------------
    > ---
```

```
943 . estimates store ri_2

944 .
945 . ** STD regression
946 .
947 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
    > revenuepershare currentratio if icbindustryname=="Real Estate", vce(robust)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =         85
    Group variable: ric                             Number of groups  =         17

    R-sq:                                           Obs per group:
         within  = 0.2304                                         min =          5
         between = 0.5132                                         avg =        5.0
         overall = 0.3300                                         max =          5

                                                    Wald chi2(11)     =     327.34
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 17 clusters in r
    > ic)
    ----------------+-----------------------------------------------------------
    > ----
                    |               Robust
         sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    ----------------+-----------------------------------------------------------
    > ----
        _Iyear_2016 |   .0886702   .0502303     1.77   0.078    -.0097793    .1871
    > 198
        _Iyear_2017 |   .0091176   .0386664     0.24   0.814     -.066667    .0849
    > 023
        _Iyear_2018 |  -.0059326   .0293681    -0.20   0.840     -.063493    .0516
    > 277
        _Iyear_2019 |   .1269172   .0564558     2.25   0.025     .0162657    .2375
    > 686
         dummy_ESGA |  -.0379864   .0298869    -1.27   0.204    -.0965636    .0205
    > 908
         dummy_ESGB |  -.0370165   .0276522    -1.34   0.181    -.0912138    .0171
    > 809
         dummy_ESGC |   .0448881   .0392588     1.14   0.253    -.0320577     .121
    > 834
             mktcap |  -2.85e-06   1.14e-06    -2.50   0.012    -5.07e-06   -6.17e
    > -07
            debtequ |   .0011125   .0082117     0.14   0.892    -.0149822    .0172
    > 072
    revenuepershare |   .0000288   .0000715     0.40   0.687    -.0001113     .000
    > 169
```

```
   currentratio |   -.011426   .0095236    -1.20   0.230     -.030092    .0072
> 399
         _cons |   .2951531   .0462485     6.38   0.000     .2045076    .3857
> 985
-------------------------------------------------------------------------------
> ----
       sigma_u |  .04965365
       sigma_e |  .12240217
           rho |  .14130654   (fraction of variance due to u_i)
-------------------------------------------------------------------------------
> ----

948 . estimates store ri_3

949 .
950 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
    > qu revenuepershare currentratio if icbindustryname=="Real Estate", vce(robus
    > t)
    i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

    Random-effects GLS regression                   Number of obs     =         85
    Group variable: ric                             Number of groups  =         17

    R-sq:                                           Obs per group:
         within  = 0.2102                                         min =          5
         between = 0.5476                                         avg =        5.0
         overall = 0.3271                                         max =          5

                                                    Wald chi2(11)     =     408.96
    corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 17 clusters in r
    > ic)
    -------------------------------------------------------------------------------
    > ----
                 |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
    > al]
    -------------------------------------------------------------------------------
    > ----
      _Iyear_2016 |   .0875625   .0506332     1.73   0.084    -.0116768    .1868
    > 017
      _Iyear_2017 |   .0076972    .038854     0.20   0.843    -.0684552    .0838
    > 496
      _Iyear_2018 |  -.0076106   .0292019    -0.26   0.794    -.0648453     .049
    > 624
      _Iyear_2019 |   .1208515   .0573926     2.11   0.035     .0083641    .2333
    > 389
      dummy_ESGAA |  -.0371769   .0269555    -1.38   0.168    -.0900087    .0156
```

```
> 548
    dummy_ESGBB |  -.0291358   .0269788    -1.08   0.280    -.0820133    .0237
> 416
    dummy_ESGCC |   .0414392   .0385224     1.08   0.282    -.0340634    .1169
> 418
         mktcap |  -2.82e-06   1.10e-06    -2.56   0.011    -4.97e-06   -6.58e
> -07
        debtequ |   .0001763   .0081237     0.02   0.983    -.0157459    .0160
> 985
revenuepershare |   .0000455   .0000663     0.69   0.493    -.0000845    .0001
> 755
   currentratio |  -.0117476    .009143    -1.28   0.199    -.0296675    .0061
> 723
          _cons |   .2955459   .0447058     6.61   0.000     .2079241    .3831
> 677
----------------+----------------------------------------------------------------
> ----
        sigma_u |  .04593369
        sigma_e |  .12442096
            rho |   .1199458   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

951 . estimates store ri_4

952 .
953 . ** Average returns-rf
954 .
955 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname=="Real Estate", vce(robust)

Linear regression                               Number of obs     =         84
                                                F(7, 76)          =       6.72
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1776
                                                Root MSE          =     .26612

----------------+----------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+----------------------------------------------------------------
> ----
     dummy_ESGA |   .0509979   .0960422     0.53   0.597    -.1402867    .2422
> 825
     dummy_ESGB |   .0990625    .073456     1.35   0.181    -.0472378    .2453
> 628
     dummy_ESGC |  -.0054737   .0830473    -0.07   0.948    -.1708768    .1599
```

```
> 293
         mktcap |   4.88e-06   1.04e-06     4.71   0.000     2.82e-06    6.95e
> -06
        debtequ |  -.0414742   .0135173    -3.07   0.003    -.0683962   -.0145
> 521
revenuepershare |  -.0003303   .0003227    -1.02   0.309     -.000973    .0003
> 125
    currentratio |  -.0251672   .0159294    -1.58   0.118    -.0568933    .0065
> 588
          _cons |     .05728   .0832525     0.69   0.494    -.1085318    .2230
> 917
----------------+------------------------------------------------------------
> ----

956 . estimates store ri_5

957 .
958 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Real Estate", vce(robust)

Linear regression                               Number of obs     =         84
                                                F(7, 76)          =       6.61
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1852
                                                Root MSE          =     .26488

----------------+------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+------------------------------------------------------------
> ----
    dummy_ESGAA |   .0230673   .0951067     0.24   0.809     -.166354    .2124
> 887
    dummy_ESGBB |   .1161244   .0750452     1.55   0.126    -.0333411    .2655
> 899
    dummy_ESGCC |  -.0048444   .0815218    -0.06   0.953    -.1672092    .1575
> 203
         mktcap |   4.82e-06   1.06e-06     4.55   0.000     2.71e-06    6.93e
> -06
        debtequ |   -.043371   .0141798    -3.06   0.003    -.0716125   -.0151
> 294
revenuepershare |  -.0003295   .0003145    -1.05   0.298    -.0009559    .0002
> 968
    currentratio |   -.026909   .0160865    -1.67   0.098     -.058948    .0051
> 301
          _cons |   .0638189   .0836527     0.76   0.448    -.1027899    .2304
> 278
```

```
959 . estimates store ri_6

960 .
961 . **Treynor Ratio
962 .
963 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
    > pershare currentratio if icbindustryname=="Real Estate", vce(robust)

Linear regression                               Number of obs     =         78
                                                F(7, 70)          =       4.14
                                                Prob > F          =     0.0007
                                                R-squared         =     0.3524
                                                Root MSE          =     .29669

------------------------------------------------------------------------------
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
dummy_ESGA   |  -.0510529   .1018097    -0.50   0.618    -.254106    .152001
dummy_ESGB   |    .064127    .103833     0.62   0.539   -.1429613    .271154
dummy_ESGC   |   .0260438   .1055019     0.25   0.806   -.1843731    .236460
mktcap       |   .0000114   2.99e-06     3.82   0.000    5.47e-06    .000017
debtequ      |  -.0485952    .035819    -1.36   0.179    -.120034    .022843
revenuepershare |  -.0002544   .0002259    -1.13   0.264    -.000705    .000196
currentratio |  -.0190796   .0188893    -1.01   0.316   -.0567532    .018593
_cons        |   .0392087   .1205409     0.33   0.746   -.2012026    .279620
------------------------------------------------------------------------------

> ——
```

```
964 . estimates store ri_7

965 .
966 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
    > nuepershare currentratio if icbindustryname=="Real Estate", vce(robust)

    Linear regression                               Number of obs     =         78
                                                    F(7, 70)          =       4.21
                                                    Prob > F          =     0.0006
                                                    R-squared         =     0.3574
                                                    Root MSE          =     .29554

------------------------------------------------------------------------------
> ----
             |               Robust
   TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
    dummy_ESGAA |  -.0670544   .1007534    -0.67   0.508    -.2680007    .1338
> 919
    dummy_ESGBB |   .0734962    .104498     0.70   0.484    -.1349186    .2819
> 109
    dummy_ESGCC |   .0278761   .1038605     0.27   0.789    -.1792672    .2350
> 194
         mktcap |   .0000114   3.05e-06     3.73   0.000     5.30e-06    .0000
> 175
        debtequ |  -.0491114     .03612    -1.36   0.178    -.1211505    .0229
> 276
revenuepershare |  -.0002739   .0002145    -1.28   0.206    -.0007017    .0001
> 538
   currentratio |  -.0199454   .0189033    -1.06   0.295    -.0576468    .0177
> 559
          _cons |   .0424916   .1204605     0.35   0.725    -.1977593    .2827
> 426
------------------------------------------------------------------------------
> ----
```

```
967 . estimates store ri_8

968 .
969 . esttab ri_1 ri_2 ri_7 ri_8 ri_3 ri_4 using SR_Estimations.rtf, r2 se star(*
    > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
    (output written to SR_Estimations.rtf)

970 . esttab ri_1 ri_2 ri_7 ri_8 ri_3 ri_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────
                          (1)             (2)             (3)             (4)
    >         (5)             (6)
                   SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
    >  sd_returns      sd_returns
    ──────────────────────────────────────────────────────────────────────────────
    > ──────────────────────────
    dummy_ESGA          0.141                          -0.0511
    >     -0.0380
                       (0.383)                        (0.102)
    >    (0.0299)

    dummy_ESGB          0.448                           0.0641
    >     -0.0370
                       (0.320)                        (0.104)
    >    (0.0277)

    dummy_ESGC         0.0420                          0.0260
    >      0.0449
                       (0.306)                        (0.106)
    >    (0.0393)

    mktcap          0.0000268***    0.0000266***    0.0000114***    0.0000114***
    > -0.00000285**   -0.00000282**
                  (0.00000480)    (0.00000488)    (0.00000299)    (0.00000305)    (
    > 0.00000114)    (0.00000110)

    debtequ            -0.155***       -0.158***       -0.0486         -0.0491
    >     0.00111        0.000176
                      (0.0550)        (0.0560)        (0.0358)        (0.0361)
    >   (0.00821)       (0.00812)

    revenueper~e    -0.000739       -0.000789       -0.000254       -0.000274
    >   0.0000288       0.0000455
                   (0.000887)      (0.000840)      (0.000226)      (0.000214)
    > (0.0000715)     (0.0000663)
```

currentratio	-0.0770	-0.0806	-0.0191	-0.0199	
>	-0.0114	-0.0117			
	(0.0630)	(0.0631)	(0.0189)	(0.0189)	
>	(0.00952)	(0.00914)			
dummy_ESGAA		0.0838		-0.0671	
>	-0.0372				
		(0.388)		(0.101)	
>	(0.0270)				
dummy_ESGBB		0.484		0.0735	
>	-0.0291				
		(0.321)		(0.104)	
>	(0.0270)				
dummy_ESGCC		0.0494		0.0279	
>	0.0414				
		(0.301)		(0.104)	
>	(0.0385)				
_Iyear_2016					
>	0.0887*	0.0876*			
>	(0.0502)	(0.0506)			
_Iyear_2017					
>	0.00912	0.00770			
>	(0.0387)	(0.0389)			
_Iyear_2018					
>	-0.00593	-0.00761			
>	(0.0294)	(0.0292)			
_Iyear_2019					
>	0.127**	0.121**			
>	(0.0565)	(0.0574)			

```
    _cons                 0.122           0.135          0.0392          0.0425
    >       0.295***        0.296***
                        (0.327)         (0.328)         (0.121)         (0.120)
    >    (0.0462)        (0.0447)
    ------------------------------------------------------------------------------
    > ------------------------------
    N                        84              84              78              78
    >          85              85
    R-sq                  0.255           0.260           0.352           0.357
    >
    ------------------------------------------------------------------------------
    > ------------------------------
    Standard errors in parentheses
    * p<0.10, ** p<0.05, *** p<0.01

971 .
972 . ** Graph
973 .
974 . twoway (qfit returns_rf esg if icbindustryname=="Real Estate", legend(label(
    > 1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Real Estate", legend(l
    > abel(2 ESG Combined))), title("Real Estate: Excess Returns per ESG Score")

975 . graph export RealEstate.pdf,replace
    (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
    > roject/RealEstate.pdf written in PDF format)

976 .
977 . /*
    > twoway (qfit returns_rf esg if icbindustryname=="Real Estate"), title("Real
    > Estate: ESG & Excess Returns")
    > graph export RealEstate_ESG.pdf,replace
    >
    > twoway (qfit returns_rf esgcomb if icbindustryname=="Real Estate"), title("R
    > eal Estate: ESG Combined & Excess Returns")
    > graph export RealEstate_ESGcomb.pdf,replace
    > */
978 .
```

```
979 . ////////////Regressions for Technology (19-20) J //////////////
    >
980 . //Fama-French 3 Factor
981 .
982 . ** ESG
983 .
984 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
    > stryname=="Technology", vce(robust)

    Linear regression                               Number of obs     =        314
                                                    F(6, 307)         =       6.11
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1072
                                                    Root MSE          =     .37419

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .7431789   .2714716     2.74   0.007     .2089984    1.277359
         SMB |   .9545653   1.399384     0.68   0.496    -1.799033    3.708164
         HML |  -.4517432   .4363515    -1.04   0.301    -1.310361    .4068748
   dummy_ESGA |  -.0311109   .0869375    -0.36   0.721    -.2021796    .1399579
   dummy_ESGB |  -.0200523    .057431    -0.35   0.727    -.1330606     .092956
   dummy_ESGC |   .0473141   .0559379     0.85   0.398    -.0627561    .1573843
        _cons |   .1017586   .0589346     1.73   0.085    -.0142083    .2177255
------------------------------------------------------------------------------

985 . estimates store r19_1

986 .
987 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
    > stryname=="Technology", vce(robust)

    Linear regression                               Number of obs     =        314
                                                    F(6, 307)         =       6.06
                                                    Prob > F          =     0.0000
                                                    R-squared         =     0.1069
                                                    Root MSE          =     .37424
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.7400544	.2719288	2.72	0.007	.2049744	1.275135
SMB	.964487	1.402091	0.69	0.492	-1.794438	3.723412
HML	-.4538817	.436694	-1.04	0.299	-1.313174	.4054104
dummy_ESGB	-.0122077	.0710131	-0.17	0.864	-.1519417	.1275263
dummy_ESGC	.0551283	.0696889	0.79	0.430	-.082	.1922567
dummy_ESGD	.0036367	.0772222	0.05	0.962	-.1483151	.1555886
_cons	.0944188	.0713582	1.32	0.187	-.0459941	.2348318

```
988 . estimates store r20_1

989 .
990 . ** ESG combined
991 .
992 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
    > ndustryname=="Technology", vce(robust)
```

Linear regression

Number of obs	=	314
F(6, 307)	=	6.46
Prob > F	=	0.0000
R-squared	=	0.1111
Root MSE	=	.37337

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.7415783	.2693472	2.75	0.006	.211578	1.271579
SMB	.9956674	1.40081	0.71	0.478	-1.760736	3.752071
HML	-.4556707	.4368939	-1.04	0.298	-1.315356	.4040148
dummy_ESGAA	-.0412558	.1110567	-0.37	0.711	-.2597845	.1772728
dummy_ESGBB	-.0231496	.0577867	-0.40	0.689	-.1368578	.0905585
dummy_ESGCC	.0635169	.0536593	1.18	0.237	-.0420696	.1691033
_cons	.0937368	.0576038	1.63	0.105	-.0196114	.2070849

```
993 . estimates store r19_2

994 .
995 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
> ndustryname=="Technology", vce(robust)

Linear regression                               Number of obs     =        314
                                                F(6, 307)         =       6.40
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1109
                                                Root MSE          =     .37342

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .7405343    .269264     2.75   0.006     .2106978    1.270371
         SMB |   1.005291   1.402944     0.72   0.474    -1.755312    3.765895
         HML |  -.4564423   .4369443    -1.04   0.297    -1.316227    .4033422
 dummy_ESGBB |  -.0257017   .0820514    -0.31   0.754     -.187156    .1357526
 dummy_ESGCC |     .06099   .0790016     0.77   0.441    -.0944631     .216443
 dummy_ESGDD |  -.0077911   .0860761    -0.09   0.928     -.177165    .1615828
       _cons |   .0966062   .0820548     1.18   0.240    -.0648547    .2580671
------------------------------------------------------------------------------

996 . estimates store r20_2

997 .
998 . ** E
999 .
1000 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
> me=="Technology", vce(robust)

Linear regression                               Number of obs     =        314
                                                F(6, 307)         =       6.47
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1119
                                                Root MSE          =     .37321
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.7474875	.271163	2.76	0.006	.2139143	1.281061
SMB	.9027461	1.388681	0.65	0.516	-1.829792	3.635284
HML	-.4283109	.4309954	-0.99	0.321	-1.27639	.4197679
dummy_EA	.0213427	.0592888	0.36	0.719	-.0953211	.1380066
dummy_EB	-.0353125	.0667355	-0.53	0.597	-.1666293	.0960043
dummy_EC	-.0901545	.0715843	-1.26	0.209	-.2310123	.0507034
_cons	.1252227	.0651918	1.92	0.056	-.0030565	.253502

```
1001 . estimates store r19_3

1002 .
1003 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
     > me=="Technology", vce(robust)
```

Linear regression

Number of obs	=	314
F(6, 307)	=	6.46
Prob > F	=	0.0000
R-squared	=	0.1118
Root MSE	=	.37321

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.7478716	.2711631	2.76	0.006	.2142982	1.281445
SMB	.9218603	1.38561	0.67	0.506	-1.804633	3.648354
HML	-.4323667	.4307019	-1.00	0.316	-1.279868	.4151345
dummy_EB	-.0558624	.0533532	-1.05	0.296	-.1608466	.0491218
dummy_EC	-.1106605	.0595967	-1.86	0.064	-.2279302	.0066093
dummy_ED	-.0216004	.0632408	-0.34	0.733	-.1460406	.1028399
_cons	.1459678	.0498806	2.93	0.004	.0478167	.2441188

```
1004 . estimates store r20_3

1005 .
1006 . ** S
1007 .
1008 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
> me=="Technology", vce(robust)

Linear regression                               Number of obs     =        314
                                                F(6, 307)         =       5.97
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1084
                                                Root MSE          =     .37394

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .7216907   .2683325     2.69   0.008     .1936871    1.249694
         SMB |   .9777756   1.384716     0.71   0.481     -1.74696    3.702511
         HML |  -.4508644   .4308264    -1.05   0.296    -1.298611    .3968819
    dummy_SA |  -.0505922   .0858489    -0.59   0.556    -.2195188    .1183344
    dummy_SB |   .0557244    .078358     0.71   0.478    -.0984624    .2099111
    dummy_SC |  -.0035775   .0754113    -0.05   0.962     -.151966     .144811
       _cons |    .107145   .0800705     1.34   0.182    -.0504114    .2647015
------------------------------------------------------------------------------

1009 . estimates store r19_4

1010 .
1011 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
> me=="Technology", vce(robust)

Linear regression                               Number of obs     =        314
                                                F(6, 307)         =       5.93
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1077
                                                Root MSE          =     .37409
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.71775	.2686572	2.67	0.008	.1891075	1.246392
SMB	.952045	1.381387	0.69	0.491	-1.76614	3.67023
HML	-.4446289	.4298994	-1.03	0.302	-1.290551	.4012933
dummy_SB	.0898491	.0597657	1.50	0.134	-.0277531	.2074513
dummy_SC	.0305245	.055866	0.55	0.585	-.0794043	.1404533
dummy_SD	.0235833	.0973964	0.24	0.809	-.1680658	.2152323
_cons	.0731654	.0604257	1.21	0.227	-.0457355	.1920662

```
1012 . estimates store r20_4

1013 .
1014 . ** G
1015 .
1016 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
     > me=="Technology", vce(robust)

Linear regression                               Number of obs     =        314
                                                F(6, 307)         =       5.88
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1103
                                                Root MSE          =     .37354
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.7440444	.2745178	2.71	0.007	.2038698	1.284219
SMB	.9040451	1.385196	0.65	0.514	-1.821634	3.629724
HML	-.4294184	.4288053	-1.00	0.317	-1.273188	.4143509
dummy_GA	.0251197	.0737104	0.34	0.733	-.1199218	.1701612
dummy_GB	-.0805931	.0567115	-1.42	0.156	-.1921856	.0309993
dummy_GC	-.0394161	.0600312	-0.66	0.512	-.1575408	.0787086
_cons	.1498534	.0587482	2.55	0.011	.0342534	.2654534

```
1017 . estimates store r19_5

1018 .
1019 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
     > me=="Technology", vce(robust)

     Linear regression                               Number of obs     =        314
                                                     F(6, 307)         =       5.82
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.1101
                                                     Root MSE          =     .37358

     ------------------------------------------------------------------------------
                  |               Robust
       returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
     -------------+----------------------------------------------------------------
            mktrf |   .7464217   .2742012     2.72   0.007     .2068701    1.285973
              SMB |   .9138163   1.389042     0.66   0.511     -1.81943    3.647063
              HML |  -.4309208   .4292962    -1.00   0.316    -1.275656    .4138146
         dummy_GB |  -.0965365   .0605857    -1.59   0.112    -.2157522    .0226792
         dummy_GC |  -.0552926    .063628    -0.87   0.386    -.1804947    .0699096
         dummy_GD |   -.013793   .0702198    -0.20   0.844     -.151966     .12438
            _cons |   .1656924    .066763     2.48   0.014     .0343213    .2970634
     ------------------------------------------------------------------------------

1020 . estimates store r20_5

1021 .
1022 . ** Final
1023 .
1024 . esttab r19_1 r19_2 r19_3 r19_4 r19_5 using FF_Estimations.rtf, r2 se star(*
     > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
     (output written to FF_Estimations.rtf)

1025 . esttab r19_1 r19_2 r19_3 r19_4 r19_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

     ------------------------------------------------------------------------------
     > ------------
                            (1)             (2)             (3)             (4)
     >         (5)
                     returns_rf      returns_rf      returns_rf      returns_rf
     >  returns_rf
     ------------------------------------------------------------------------------
     > ------------
     mktrf                0.743***        0.742***        0.747***        0.722***
     >       0.744***
                         (0.271)         (0.269)         (0.271)         (0.268)
     >     (0.275)
```

SMB	0.955	0.996	0.903	0.978
>	0.904			
	(1.399)	(1.401)	(1.389)	(1.385)
>	(1.385)			
HML	-0.452	-0.456	-0.428	-0.451
>	-0.429			
	(0.436)	(0.437)	(0.431)	(0.431)
>	(0.429)			
dummy_ESGA	-0.0311			
>				
	(0.0869)			
>				
dummy_ESGB	-0.0201			
>				
	(0.0574)			
>				
dummy_ESGC	0.0473			
>				
	(0.0559)			
>				
dummy_ESGAA		-0.0413		
>				
		(0.111)		
>				
dummy_ESGBB		-0.0231		
>				
		(0.0578)		
>				
dummy_ESGCC		0.0635		
>				
		(0.0537)		
>				
dummy_EA			0.0213	
>				
			(0.0593)	
>				

dummy_EB	-0.0353		
	(0.0667)		
dummy_EC	-0.0902		
	(0.0716)		
dummy_SA			-0.0506
			(0.0858)
dummy_SB			0.0557
			(0.0784)
dummy_SC			-0.00358
			(0.0754)
dummy_GA	0.0251		
	(0.0737)		
dummy_GB	-0.0806		
	(0.0567)		
dummy_GC	-0.0394		
	(0.0600)		

```
_cons                0.102*          0.0937           0.125*           0.107
>       0.150**
                    (0.0589)        (0.0576)         (0.0652)         (0.0801)
>     (0.0587)
------------------------------------------------------------------------------
> ──────────────
N                       314             314              314              314
>         314
R-sq                 0.107           0.111            0.112            0.108
>       0.110
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1026 . esttab r20_1 r20_2 r20_3 r20_4 r20_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                        (1)             (2)              (3)              (4)
>         (5)
                 returns_rf      returns_rf       returns_rf       returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf                0.740***        0.741***         0.748***         0.718***
>       0.746***
                    (0.272)         (0.269)          (0.271)          (0.269)
>     (0.274)

SMB                  0.964           1.005            0.922            0.952
>       0.914
                    (1.402)         (1.403)          (1.386)          (1.381)
>     (1.389)

HML                 -0.454          -0.456           -0.432           -0.445
>      -0.431
                    (0.437)         (0.437)          (0.431)          (0.430)
>     (0.429)

dummy_ESGB          -0.0122
>
                   (0.0710)
>
```

dummy_ESGC	0.0551			
	(0.0697)			
dummy_ESGD	0.00364			
	(0.0772)			
dummy_ESGBB		-0.0257		
		(0.0821)		
dummy_ESGCC		0.0610		
		(0.0790)		
dummy_ESGDD		-0.00779		
		(0.0861)		
dummy_EB			-0.0559	
			(0.0534)	
dummy_EC			-0.111*	
			(0.0596)	
dummy_ED			-0.0216	
			(0.0632)	
dummy_SB				0.0898
				(0.0598)

dummy_SC				0.0305
				(0.0559)
dummy_SD				0.0236
				(0.0974)
dummy_GB	-0.0965			
	(0.0606)			
dummy_GC	-0.0553			
	(0.0636)			
dummy_GD	-0.0138			
	(0.0702)			
_cons	0.0944	0.0966	0.146***	0.0732
	(0.0714)	(0.0821)	(0.0499)	(0.0604)
N	314	314	314	314
R-sq	0.107	0.111	0.112	0.108

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
1027 .
1028 . //Sharpe Ratio
1029 .
1030 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
     > ershare currentratio if icbindustryname=="Technology", vce(robust)

     Linear regression                               Number of obs     =        294
                                                     F(7, 286)         =       4.69
                                                     Prob > F          =     0.0001
                                                     R-squared         =     0.0473
                                                     Root MSE          =     1.2331

     ----------------+------------------------------------------------------------------
     > ---
                     |               Robust
        SharpeRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
     > al]
     ----------------+------------------------------------------------------------------
     > ---
         dummy_ESGA  |   .0588024    .405062     0.15   0.885    -.7384785    .8560
     > 833
         dummy_ESGB  |   .1181342   .2170197     0.54   0.587    -.3090241    .5452
     > 925
         dummy_ESGC  |   .2527762   .1748722     1.45   0.149    -.0914237     .596
     > 976
              mktcap |   1.32e-06   4.79e-07     2.75   0.006     3.76e-07    2.26e
     > -06
            debtequ  |  -.0604785   .0150729    -4.01   0.000    -.0901463   -.0308
     > 107
     revenuepershare |  -.0004657   .0009724    -0.48   0.632    -.0023797    .0014
     > 482
       currentratio  |   .0012069   .0347846     0.03   0.972    -.0672594    .0696
     > 732
               _cons |   .5544015   .1768454     3.13   0.002     .2063179    .9024
     > 851
     ----------------+------------------------------------------------------------------
     > ---
```

```
1031 . estimates store rj_1

1032 .
1033 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
     > uepershare currentratio if icbindustryname=="Technology", vce(robust)

     Linear regression                               Number of obs     =        294
                                                     F(7, 286)         =       4.40
                                                     Prob > F          =     0.0001
                                                     R-squared         =     0.0479
                                                     Root MSE          =     1.2326

------------------------------------------------------------------------------
> ---
             |               Robust
SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ---
  dummy_ESGAA |   .0933924   .5530189     0.17   0.866     -.995111    1.181
> 896
  dummy_ESGBB |   .1486063   .2138405     0.69   0.488    -.2722944     .569
> 507
  dummy_ESGCC |   .2662421   .1714347     1.55   0.122    -.0711916    .6036
> 757
       mktcap |   1.15e-06   4.24e-07     2.71   0.007     3.14e-07    1.98e
> -06
      debtequ |  -.0623557   .0147818    -4.22   0.000    -.0914506   -.0332
> 608
revenuepershare |  -.0004843   .0009701    -0.50   0.618    -.0023938    .0014
> 253
 currentratio |   .0046622   .0350368     0.13   0.894    -.0643006     .073
> 625
        _cons |   .5358036   .1784517     3.00   0.003     .1845585    .8870
> 488
------------------------------------------------------------------------------
> ---
```

```
1034 . estimates store rj_2

1035 .
1036 . ** STD regression
1037 .
1038 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
     > revenuepershare currentratio if icbindustryname=="Technology", vce(robust)
     i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

     Random-effects GLS regression                   Number of obs     =        299
     Group variable: ric                             Number of groups  =         64

     R-sq:                                           Obs per group:
          within  = 0.2275                                         min =          1
          between = 0.3570                                         avg =        4.7
          overall = 0.2911                                         max =          5

                                                     Wald chi2(11)     =     222.41
     corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 64 clusters in r
     > ic)
     ----------------+-----------------------------------------------------------
     > ----
                     |               Robust
          sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
     > al]
     ----------------+-----------------------------------------------------------
     > ----
         _Iyear_2016 |   .0430822   .0199532     2.16   0.031     .0039747    .0821
     > 898
         _Iyear_2017 |  -.0602947   .0171538    -3.51   0.000    -.0939156   -.0266
     > 738
         _Iyear_2018 |   .0364168   .0241365     1.51   0.131    -.0108898    .0837
     > 233
         _Iyear_2019 |   .0904552   .0254167     3.56   0.000     .0406394     .140
     > 271
          dummy_ESGA |  -.0559731   .0695429    -0.80   0.421    -.1922748    .0803
     > 286
          dummy_ESGB |  -.0803268   .0272795    -2.94   0.003    -.1337937   -.0268
     > 599
          dummy_ESGC |  -.0394528   .0279017    -1.41   0.157    -.0941392    .0152
     > 336
              mktcap |  -1.52e-07   7.68e-08    -1.97   0.048    -3.02e-07   -1.11e
     > -09
             debtequ |   .0015225   .0019453     0.78   0.434    -.0022903    .0053
     > 353
     revenuepershare |  -.0003171   .0000926    -3.42   0.001    -.0004986   -.0001
     > 355
```

```
   currentratio |   .0089218   .0044257     2.02   0.044     .0002475    .0175
> 961
         _cons |   .3523443   .0288234    12.22   0.000     .2958514    .4088
> 371
--------------+----------------------------------------------------------------
> ----
       sigma_u |  .06886696
       sigma_e |  .09776265
           rho |  .33164993   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

1039 . estimates store rj_3

1040 .
1041 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Technology", vce(robust
> )
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =        299
Group variable: ric                             Number of groups  =         64

R-sq:                                           Obs per group:
     within  = 0.2301                                         min =          1
     between = 0.3533                                         avg =        4.7
     overall = 0.2961                                         max =          5

                                                Wald chi2(11)     =     211.07
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                    (Std. Err. adjusted for 64 clusters in r
> ic)
--------------+----------------------------------------------------------------
> ----
              |               Robust
   sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
--------------+----------------------------------------------------------------
> ----
   _Iyear_2016 |   .0429521   .0195982     2.19   0.028     .0045404    .0813
> 639
   _Iyear_2017 |  -.0614402   .0169384    -3.63   0.000    -.0946389   -.0282
> 415
   _Iyear_2018 |    .036905   .0240949     1.53   0.126    -.0103202    .0841
> 301
   _Iyear_2019 |   .0888476    .024309     3.65   0.000     .0412029    .1364
> 923
   dummy_ESGAA |  -.0796423    .056015    -1.42   0.155    -.1894297    .0301
```

```
> 451
    dummy_ESGBB |  -.0827236   .0271576    -3.05   0.002    -.1359514   -.0294
> 958
    dummy_ESGCC |  -.0353435   .0266241    -1.33   0.184    -.0875258    .0168
> 387
         mktcap |  -1.81e-07   5.95e-08    -3.04   0.002    -2.98e-07   -6.44e
> -08
        debtequ |   .0012052   .0020077     0.60   0.548    -.0027298    .0051
> 403
revenuepershare |  -.0003023   .0000874    -3.46   0.001    -.0004737   -.0001
> 309
   currentratio |   .0085865   .0043941     1.95   0.051    -.0000258    .0171
> 987
          _cons |   .3519087   .0287573    12.24   0.000     .2955454     .408
> 272
----------------+------------------------------------------------------------
> ----
        sigma_u |   .0673701
        sigma_e |  .09763189
            rho |  .32256566   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

1042 . estimates store rj_4

1043 .
1044 . ** Average returns-rf
1045 .
1046 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
    > rshare currentratio if icbindustryname== "Technology", vce(robust)

Linear regression                               Number of obs     =        294
                                                F(7, 286)         =       7.64
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0442
                                                Root MSE          =     .38216

----------------+------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+------------------------------------------------------------
> ----
     dummy_ESGA |  -.0393646   .1107903    -0.36   0.723    -.2574323    .1787
> 032
     dummy_ESGB |   .0149827   .0661447     0.23   0.821    -.1152094    .1451
> 748
     dummy_ESGC |   .0821051   .0602894     1.36   0.174    -.0365621    .2007
```

```
> 723
         mktcap |   2.63e-07   1.37e-07     1.92   0.056    -7.29e-09    5.34e
> -07
        debtequ |  -.0199486   .0036718    -5.43   0.000    -.0271757   -.0127
> 215
revenuepershare |  -.0000831   .0003015    -0.28   0.783    -.0006765    .0005
> 103
    currentratio |   .0102953   .0128399     0.80   0.423    -.0149773    .0355
> 679
           _cons |   .1461056   .0626554     2.33   0.020     .0227814    .2694
> 297
-----------------+------------------------------------------------------------
> ----

1047 . estimates store rj_5

1048 .
1049 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Technology", vce(robust)

Linear regression                               Number of obs     =        294
                                                F(7, 286)         =       6.96
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0457
                                                Root MSE          =     .38186

-----------------+------------------------------------------------------------
> ----
                 |               Robust
      returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-----------------+------------------------------------------------------------
> ----
     dummy_ESGAA |   .0281659   .1435059     0.20   0.845    -.2542958    .3106
> 275
     dummy_ESGBB |   .0162829    .064812     0.25   0.802    -.1112861    .1438
> 519
     dummy_ESGCC |   .0928041   .0594722     1.56   0.120    -.0242546    .2098
> 628
         mktcap |   1.59e-07   1.21e-07     1.31   0.192    -8.04e-08    3.98e
> -07
        debtequ |  -.0207642   .0036484    -5.69   0.000    -.0279453   -.0135
> 832
revenuepershare |  -.0000872   .0003017    -0.29   0.773    -.0006811    .0005
> 067
    currentratio |   .0113757   .0130307     0.87   0.383    -.0142726    .0370
> 239
           _cons |   .1382918   .0638092     2.17   0.031     .0126966    .2638
> 871
```

```
------------------+-----------------------------------------------------------
> ----

1050 . estimates store rj_6

1051 .
1052 . **Treynor Ratio
1053 .
1054 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Technology", vce(robust)

Linear regression                               Number of obs     =        284
                                                F(7, 276)         =       6.70
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0342
                                                Root MSE          =     .3618

------------------+-----------------------------------------------------------
> ----
                  |               Robust
   TreynorRatio   |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
------------------+-----------------------------------------------------------
> ----
     dummy_ESGA   |  -.0519566   .0891234    -0.58   0.560    -.2274045    .1234
> 914
     dummy_ESGB   |   .0202597   .0679223     0.30   0.766    -.1134519    .1539
> 713
     dummy_ESGC   |   .0610778   .0591515     1.03   0.303    -.0553677    .1775
> 232
         mktcap   |   1.95e-07   1.14e-07     1.71   0.088    -2.93e-08    4.19e
> -07
        debtequ   |  -.0179593   .0034223    -5.25   0.000    -.0246965   -.0112
> 221
revenuepershare   |  -.0002465    .000333    -0.74   0.460    -.0009021     .000
> 409
   currentratio   |   .0028624   .0095746     0.30   0.765    -.0159861    .0217
> 109
          _cons   |   .1638201    .060759     2.70   0.007     .0442103      .28
> 343
------------------+-----------------------------------------------------------
> ----
```

```
1055 . estimates store rj_7

1056 .
1057 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
> nuepershare currentratio if icbindustryname=="Technology", vce(robust)

Linear regression                               Number of obs     =        284
                                                F(7, 276)         =       6.20
                                                Prob > F          =     0.0000
                                                R-squared         =     0.0333
                                                Root MSE          =     .36196

------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGAA |  -.0122801   .1085187    -0.11   0.910    -.2259097    .2013
> 495
  dummy_ESGBB |    .024087   .0670886     0.36   0.720    -.1079834    .1561
> 573
  dummy_ESGCC |   .0647915   .0579314     1.12   0.264    -.0492521     .178
> 835
       mktcap |   1.15e-07   1.01e-07     1.13   0.258    -8.47e-08    3.15e
> -07
      debtequ |  -.0185097    .003346    -5.53   0.000    -.0250966   -.0119
> 228
revenuepershare |  -.0002566   .0003328    -0.77   0.441    -.0009117    .0003
> 986
 currentratio |   .0037191   .0097534     0.38   0.703    -.0154813    .0229
> 196
        _cons |   .1592707   .0611133     2.61   0.010     .0389632    .2795
> 782
------------------------------------------------------------------------------
> ----
```

```
1058 . estimates store rj_8

1059 .
1060 . esttab rj_1 rj_2 rj_7 rj_8 rj_3 rj_4 using SR_Estimations.rtf, r2 se star(*
     > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
     (output written to SR_Estimations.rtf)

1061 . esttab rj_1 rj_2 rj_7 rj_8 rj_3 rj_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

     ------------------------------------------------------------------------------
     > ----------------------------
                           (1)             (2)             (3)             (4)
     >         (5)             (6)
                    SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
     >  sd_returns      sd_returns
     ------------------------------------------------------------------------------
     > ----------------------------
     dummy_ESGA          0.0588                         -0.0520
     >     -0.0560
                        (0.405)                        (0.0891)
     >    (0.0695)

     dummy_ESGB           0.118                          0.0203
     >     -0.0803***
                        (0.217)                        (0.0679)
     >    (0.0273)

     dummy_ESGC           0.253                          0.0611
     >     -0.0395
                        (0.175)                        (0.0592)
     >    (0.0279)

     mktcap          0.00000132***   0.00000115***  0.000000195*    0.000000115    -
     > 0.000000152**  -0.000000181***
                    (0.000000479)    (0.000000424)    (0.000000114)    (0.000000101)
     >      (7.68e-08)      (5.95e-08)

     debtequ           -0.0605***      -0.0624***      -0.0180***      -0.0185***
     >     0.00152         0.00121
                       (0.0151)        (0.0148)        (0.00342)       (0.00335)
     >   (0.00195)       (0.00201)

     revenueper~e    -0.000466       -0.000484       -0.000247       -0.000257
     >   -0.000317***    -0.000302***
                      (0.000972)      (0.000970)      (0.000333)      (0.000333)
     > (0.0000926)     (0.0000874)
```

```
currentratio      0.00121          0.00466          0.00286          0.00372
>     0.00892**        0.00859*
                  (0.0348)         (0.0350)         (0.00957)        (0.00975)
>    (0.00443)        (0.00439)

dummy_ESGAA                          0.0934                           -0.0123
>                    -0.0796
                                     (0.553)                          (0.109)
>                   (0.0560)

dummy_ESGBB                           0.149                           0.0241
>                    -0.0827***
                                     (0.214)                          (0.0671)
>                   (0.0272)

dummy_ESGCC                           0.266                           0.0648
>                    -0.0353
                                     (0.171)                          (0.0579)
>                   (0.0266)

_Iyear_2016
>      0.0431**         0.0430**

>     (0.0200)         (0.0196)

_Iyear_2017
>     -0.0603***       -0.0614***

>     (0.0172)         (0.0169)

_Iyear_2018
>      0.0364           0.0369

>     (0.0241)         (0.0241)

_Iyear_2019
>      0.0905***        0.0888***

>     (0.0254)         (0.0243)
```

```
_cons                0.554***        0.536***        0.164***        0.159***
>       0.352***        0.352***
                    (0.177)         (0.178)         (0.0608)        (0.0611)
>    (0.0288)        (0.0288)
------------------------------------------------------------------------------
> ------------------------------
N                      294             294             284             284
>         299             299
R-sq                 0.047           0.048           0.034           0.033
>
------------------------------------------------------------------------------
> ------------------------------
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1062 .
1063 . ** Graph
1064 .
1065 . twoway (qfit returns_rf esg if icbindustryname=="Technology", legend(label(1
>  ESG)))(qfit returns_rf esgcomb if icbindustryname=="Technology", legend(lab
> el(2 ESG Combined))), title("Technology: Excess Returns per ESG Score")

1066 . graph export Technology.pdf,replace
(file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
> roject/Technology.pdf written in PDF format)

1067 .
1068 . /*
> twoway (qfit returns_rf esg if icbindustryname=="Technology"), title("Techno
> logy: ESG & Excess Returns")
> graph export Technology_ESG.pdf,replace
>
> twoway (qfit returns_rf esgcomb if icbindustryname=="Technology"), title("Te
> chnology: ESG Combined & Excess Returns")
> graph export Technology_ESGcomb.pdf,replace
> */
1069 .
```

```
1070 . ////////////Regressions for Telecommunications (21-22) K //////////////
     >
1071 . //Fama-French 3 Factor
1072 .
1073 . ** ESG
1074 .
1075 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
     > stryname=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         75
                                                     F(6, 68)          =       3.50
                                                     Prob > F          =     0.0045
                                                     R-squared         =     0.1633
                                                     Root MSE          =     .29432

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |    .192844   .5777658     0.33   0.740    -.9600698    1.345758
         SMB |   .7808582   2.466068     0.32   0.752    -4.140105    5.701821
         HML |   .3480989   .7173942     0.49   0.629    -1.083439    1.779637
   dummy_ESGA |  -.1038667   .1075314    -0.97   0.338    -.3184422    .1107088
   dummy_ESGB |  -.2435373   .0845676    -2.88   0.005    -.4122893   -.0747853
   dummy_ESGC |  -.1486841   .1051105    -1.41   0.162    -.3584289    .0610607
        _cons |   .2886267   .1062044     2.72   0.008     .0766991    .5005543
------------------------------------------------------------------------------

1076 . estimates store r21_1

1077 .
1078 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
     > stryname=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         75
                                                     F(6, 68)          =       3.54
                                                     Prob > F          =     0.0041
                                                     R-squared         =     0.1606
                                                     Root MSE          =      .2948
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.1845667	.5767169	0.32	0.750	-.966254	1.335387
SMB	.6822503	2.49227	0.27	0.785	-4.290998	5.655499
HML	.3718404	.7237414	0.51	0.609	-1.072363	1.816044
dummy_ESGB	-.1720418	.0665073	-2.59	0.012	-.304755	-.0393286
dummy_ESGC	-.0767054	.0931844	-0.82	0.413	-.2626521	.1092412
dummy_ESGD	.0722572	.1027578	0.70	0.484	-.1327928	.2773071
_cons	.2165707	.1075141	2.01	0.048	.0020297	.4311118

```
1079 . estimates store r22_1

1080 .
1081 . ** ESG combined
1082 .
1083 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
     > ndustryname=="Telecommunications", vce(robust)
```

Linear regression

Number of obs	=	75
F(6, 68)	=	2.93
Prob > F	=	0.0133
R-squared	=	0.1583
Root MSE	=	.29519

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.2547307	.5792171	0.44	0.661	-.9010792	1.41054
SMB	.5450618	2.462567	0.22	0.825	-4.368915	5.459038
HML	.4152105	.7200452	0.58	0.566	-1.021617	1.852038
dummy_ESGAA	-.1500839	.1035858	-1.45	0.152	-.3567861	.0566184
dummy_ESGBB	-.2639729	.0966954	-2.73	0.008	-.4569255	-.0710203
dummy_ESGCC	-.1562621	.0945042	-1.65	0.103	-.3448423	.032318
_cons	.279306	.1061433	2.63	0.011	.0675003	.4911117

```
1084 . estimates store r21_2

1085 .
1086 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
     > ndustryname=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         75
                                                     F(6, 68)          =       2.89
                                                     Prob > F          =     0.0145
                                                     R-squared         =     0.1528
                                                     Root MSE          =     .29616

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .2570107    .580759     0.44   0.660    -.9018759    1.415897
         SMB |   .3605749   2.478025     0.15   0.885    -4.584246    5.305396
         HML |   .4608265   .7239211     0.64   0.527    -.9837356    1.905389
 dummy_ESGBB |  -.1671341   .0792954    -2.11   0.039    -.3253656   -.0089027
 dummy_ESGCC |  -.0587741   .0788179    -0.75   0.458    -.2160527    .0985046
 dummy_ESGDD |   .0975197    .100936     0.97   0.337     -.103895    .2989343
       _cons |   .1796121   .1001916     1.79   0.077    -.0203172    .3795414
------------------------------------------------------------------------------

1087 . estimates store r22_2

1088 .
1089 . ** E
1090 .
1091 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
     > me=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         75
                                                     F(6, 68)          =       2.45
                                                     Prob > F          =     0.0334
                                                     R-squared         =     0.1095
                                                     Root MSE          =     .30364
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.2517368	.5717489	0.44	0.661	-.8891703	1.392644
SMB	.3842025	2.377845	0.16	0.872	-4.360712	5.129117
HML	.4242386	.6998618	0.61	0.546	-.9723139	1.820791
dummy_EA	.0007309	.0923854	0.01	0.994	-.1836213	.1850832
dummy_EB	-.1005964	.0840638	-1.20	0.236	-.2683432	.0671503
dummy_EC	.1097816	.1112885	0.99	0.327	-.1122912	.3318544
_cons	.1537859	.1077599	1.43	0.158	-.0612456	.3688174

```
1092 . estimates store r21_3

1093 .
1094 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
     > me=="Telecommunications", vce(robust)
```

Linear regression

Number of obs	=	75
F(6, 68)	=	2.44
Prob > F	=	0.0342
R-squared	=	0.1110
Root MSE	=	.30338

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.2486732	.5763003	0.43	0.667	-.9013163	1.398663
SMB	.3898983	2.366986	0.16	0.870	-4.33335	5.113146
HML	.4205366	.6955769	0.60	0.547	-.9674654	1.808539
dummy_EB	-.1103833	.0737582	-1.50	0.139	-.2575654	.0367988
dummy_EC	.0999844	.1032132	0.97	0.336	-.1059743	.3059431
dummy_ED	-.0309108	.1000564	-0.31	0.758	-.2305703	.1687487
_cons	.1638439	.0856809	1.91	0.060	-.0071296	.3348174

```
1095 . estimates store r22_3

1096 .
1097 . ** S
1098 .
1099 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
> me=="Telecommunications", vce(robust)

Linear regression                               Number of obs     =         75
                                                F(6, 68)          =       2.34
                                                Prob > F          =     0.0414
                                                R-squared         =     0.1221
                                                Root MSE          =     .30148

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .1888634   .6151808     0.31   0.760    -1.038711    1.416438
         SMB |   .6243432   2.607582     0.24   0.811    -4.579006    5.827693
         HML |   .3926119   .7705105     0.51   0.612    -1.144918    1.930142
    dummy_SA |  -.0577995   .1151737    -0.50   0.617     -.287625     .172026
    dummy_SB |  -.1414701     .08214    -1.72   0.090    -.3053779    .0224377
    dummy_SC |  -.1268874   .1247372    -1.02   0.313    -.3757967    .1220219
       _cons |   .2282222    .095581     2.39   0.020     .0374933    .4189512
------------------------------------------------------------------------------

1100 . estimates store r21_4

1101 .
1102 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
> me=="Telecommunications", vce(robust)

Linear regression                               Number of obs     =         75
                                                F(6, 68)          =       2.30
                                                Prob > F          =     0.0442
                                                R-squared         =     0.1197
                                                Root MSE          =     .30189
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.1509345	.6082617	0.25	0.805	-1.062833	1.364702
SMB	.7254325	2.71427	0.27	0.790	-4.690809	6.141674
HML	.3643151	.7942236	0.46	0.648	-1.220533	1.949164
dummy_SB	-.1130074	.0810996	-1.39	0.168	-.274839	.0488242
dummy_SC	-.0977913	.1159093	-0.84	0.402	-.3290847	.133502
dummy_SD	.0225567	.1114381	0.20	0.840	-.1998146	.244928
_cons	.2042865	.1291158	1.58	0.118	-.05336	.461933

```
1103 . estimates store r22_4

1104 .
1105 . ** G
1106 .
1107 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
     > me=="Telecommunications", vce(robust)

Linear regression                               Number of obs     =         75
                                                F(6, 68)          =       1.94
                                                Prob > F          =     0.0870
                                                R-squared         =     0.1295
                                                Root MSE          =     .30021
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.2121286	.5774618	0.37	0.715	-.9401785	1.364436
SMB	.5494475	2.533408	0.22	0.829	-4.50589	5.604785
HML	.4002991	.7546534	0.53	0.598	-1.105588	1.906187
dummy_GA	-.2390933	.1330823	-1.80	0.077	-.5046549	.0264683
dummy_GB	-.1313942	.1055042	-1.25	0.217	-.3419246	.0791363
dummy_GC	-.0668245	.1179373	-0.57	0.573	-.3021647	.1685157
_cons	.252664	.1337452	1.89	0.063	-.0142204	.5195484

```
1108 . estimates store r21_5

1109 .
1110 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
     > me=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         75
                                                     F(6, 68)          =       1.75
                                                     Prob > F          =     0.1227
                                                     R-squared         =     0.1081
                                                     Root MSE          =     .30386

     ------------------------------------------------------------------------------
                  |               Robust
       returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
     -------------+----------------------------------------------------------------
            mktrf |   .2408281   .5711732     0.42   0.675    -.8989302    1.380587
              SMB |   .1292074   2.486144     0.05   0.959    -4.831815     5.09023
              HML |   .5092149   .7471691     0.68   0.498    -.9817379    2.000168
         dummy_GB |   .0498968   .0914819     0.55   0.587    -.1326525    .2324461
         dummy_GC |   .1163821   .1014321     1.15   0.255    -.0860225    .3187867
         dummy_GD |   .1720066     .14496     1.19   0.240    -.1172566    .4612698
            _cons |   .0629979   .1084597     0.58   0.563    -.1534302    .2794259
     ------------------------------------------------------------------------------

1111 . estimates store r22_5

1112 .
1113 . ** Final
1114 .
1115 . esttab r21_1 r21_2 r21_3 r21_4 r21_5 using FF_Estimations.rtf, r2 se star(*
     > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
     (output written to FF_Estimations.rtf)

1116 . esttab r21_1 r21_2 r21_3 r21_4 r21_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

     ------------------------------------------------------------------------------
     > ──────────────
                             (1)             (2)             (3)             (4)
     >         (5)
                       returns_rf      returns_rf      returns_rf      returns_rf
     >  returns_rf
     ------------------------------------------------------------------------------
     > ──────────────
     mktrf                 0.193           0.255           0.252           0.189
     >       0.212
                         (0.578)         (0.579)         (0.572)         (0.615)
     >     (0.577)
```

```
SMB                 0.781          0.545          0.384          0.624
>       0.549
                  (2.466)        (2.463)        (2.378)        (2.608)
>     (2.533)

HML                 0.348          0.415          0.424          0.393
>       0.400
                  (0.717)        (0.720)        (0.700)        (0.771)
>     (0.755)

dummy_ESGA         -0.104
>
                  (0.108)
>

dummy_ESGB         -0.244***
>
                 (0.0846)
>

dummy_ESGC         -0.149
>
                  (0.105)
>

dummy_ESGAA                       -0.150
>
                                 (0.104)
>

dummy_ESGBB                       -0.264***
>
                                (0.0967)
>

dummy_ESGCC                       -0.156
>
                                (0.0945)
>

dummy_EA                                          0.000731
>
                                                 (0.0924)
>
```

dummy_EB	-0.101		
	(0.0841)		
dummy_EC	0.110		
	(0.111)		
dummy_SA		-0.0578	
		(0.115)	
dummy_SB		-0.141*	
		(0.0821)	
dummy_SC		-0.127	
		(0.125)	
dummy_GA	-0.239*		
	(0.133)		
dummy_GB	-0.131		
	(0.106)		
dummy_GC	-0.0668		
	(0.118)		

```
_cons                0.289***        0.279**         0.154           0.228**
>       0.253*
                    (0.106)         (0.106)         (0.108)         (0.0956)
>     (0.134)
------------------------------------------------------------------------------
> ──────────────
N                         75              75              75              75
>          75
R-sq                 0.163           0.158           0.109           0.122
>       0.129
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1117 . esttab r22_1 r22_2 r22_3 r22_4 r22_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                        (1)             (2)             (3)             (4)
>         (5)
                 returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf                0.185           0.257           0.249           0.151
>       0.241
                    (0.577)         (0.581)         (0.576)         (0.608)
>     (0.571)

SMB                  0.682           0.361           0.390           0.725
>       0.129
                    (2.492)         (2.478)         (2.367)         (2.714)
>     (2.486)

HML                  0.372           0.461           0.421           0.364
>       0.509
                    (0.724)         (0.724)         (0.696)         (0.794)
>     (0.747)

dummy_ESGB          -0.172**
>
                   (0.0665)
>
```

dummy_ESGC	-0.0767			
	(0.0932)			
dummy_ESGD	0.0723			
	(0.103)			
dummy_ESGBB		-0.167**		
		(0.0793)		
dummy_ESGCC		-0.0588		
		(0.0788)		
dummy_ESGDD		0.0975		
		(0.101)		
dummy_EB			-0.110	
			(0.0738)	
dummy_EC			0.1000	
			(0.103)	
dummy_ED			-0.0309	
			(0.100)	
dummy_SB				-0.113
				(0.0811)

dummy_SC				-0.0978
				(0.116)
dummy_SD				0.0226
				(0.111)
dummy_GB	0.0499			
	(0.0915)			
dummy_GC	0.116			
	(0.101)			
dummy_GD	0.172			
	(0.145)			
_cons	0.217**	0.180*	0.164*	0.204
	(0.108)	(0.100)	(0.0857)	(0.129)
	0.0630			
	(0.108)			
N	75	75	75	75
	75			
R-sq	0.161	0.153	0.111	0.120
	0.108			

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

```
1118 .
1119 . //Sharpe Ratio
1120 .
1121 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
     > ershare currentratio if icbindustryname=="Telecommunications", vce(robust)

     Linear regression                               Number of obs     =         62
                                                     F(6, 54)          =          .
                                                     Prob > F          =          .
                                                     R-squared         =     0.2047
                                                     Root MSE          =     1.1206

     ------------------------------------------------------------------------------
     > ---
                  |               Robust
     SharpeRatio  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
     > al]
     -------------+----------------------------------------------------------------
     > ---
      dummy_ESGA  |  -.9308199   .3270814    -2.85   0.006    -1.586579   -.2750
     > 611
      dummy_ESGB  |   -.807723   .3763891    -2.15   0.036    -1.562338   -.0531
     > 083
      dummy_ESGC  |  -.0374803   .3679105    -0.10   0.919    -.7750964    .7001
     > 358
          mktcap  |   4.49e-06   2.03e-06     2.21   0.031     4.15e-07    8.57e
     > -06
         debtequ  |  -.0719515   .0708342    -1.02   0.314    -.2139655    .0700
     > 626
revenuepershare  |   .0086513   .0047649     1.82   0.075    -.0009017    .0182
     > 043
    currentratio |   .0437841   .0920511     0.48   0.636    -.1407673    .2283
     > 354
           _cons |    .362956   .4904327     0.74   0.462    -.6203024    1.346
     > 214
     ------------------------------------------------------------------------------
     > ---
```

```
1122 . estimates store rk_1

1123 .
1124 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
     > uepershare currentratio if icbindustryname=="Telecommunications", vce(robust
     > )

     Linear regression                               Number of obs     =         62
                                                     F(6, 54)          =          .
                                                     Prob > F          =          .
                                                     R-squared         =     0.1824
                                                     Root MSE          =     1.1362

------------------------------------------------------------------------------
> ----
             |               Robust
SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
 dummy_ESGAA |  -.8544144   .3182042    -2.69   0.010    -1.492375   -.2164
> 534
 dummy_ESGBB |  -.6248485    .369972    -1.69   0.097    -1.366598    .1169
> 006
 dummy_ESGCC |  -.1241832   .3499016    -0.35   0.724    -.8256936    .5773
> 272
      mktcap |   2.11e-06   2.02e-06     1.04   0.303    -1.95e-06    6.16e
> -06
     debtequ |  -.0566137   .0696471    -0.81   0.420    -.1962477    .0830
> 204
revenuepersh~e |   .0095281     .00473     2.01   0.049     .0000449    .0190
> 112
currentratio |   .0631154   .0881256     0.72   0.477    -.1135659    .2397
> 966
       _cons |   .2491641   .4746703     0.52   0.602    -.7024926    1.200
> 821
------------------------------------------------------------------------------
> ----
```

```
1125 . estimates store rk_2

1126 .
1127 . ** STD regression
1128 .
1129 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
     > revenuepershare currentratio if icbindustryname=="Telecommunications", vce(r
     > obust)
     i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

     Random-effects GLS regression                   Number of obs     =         62
     Group variable: ric                             Number of groups  =         13

     R-sq:                                           Obs per group:
          within  = 0.1925                                         min =          4
          between = 0.9212                                         avg =        4.8
          overall = 0.6599                                         max =          5

                                                     Wald chi2(11)     =    2278.60
     corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                        (Std. Err. adjusted for 13 clusters in r
     > ic)
     ------------------------------------------------------------------------------
     > ----
                  |               Robust
       sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
     > al]
     -------------+----------------------------------------------------------------
     > ----
       _Iyear_2016 |   .0035913   .0308709     0.12   0.907    -.0569146    .0640
     > 973
       _Iyear_2017 |  -.0322903   .0335231    -0.96   0.335    -.0979944    .0334
     > 139
       _Iyear_2018 |   .0076487   .0412164     0.19   0.853     -.073134    .0884
     > 315
       _Iyear_2019 |   .0502187   .0381552     1.32   0.188    -.0245641    .1250
     > 015
        dummy_ESGA |  -.1370825   .0330983    -4.14   0.000    -.2019541    -.072
     > 211
        dummy_ESGB |   -.058971   .0227407    -2.59   0.010     -.103542   -.0144
     > 001
        dummy_ESGC |  -.0104927   .0231584    -0.45   0.650    -.0558823    .0348
     > 969
            mktcap |  -5.15e-07   1.26e-07    -4.09   0.000    -7.62e-07   -2.68e
     > -07
           debtequ |   .0224999   .0048932     4.60   0.000     .0129095    .0320
     > 904
revenuepershare |  -.0011316   .0000999   -11.33   0.000    -.0013274   -.0009
```

```
> 359
   currentratio |   .0008466   .0057702     0.15   0.883    -.0104628    .0121
> 561
          _cons |   .3242031   .0299773    10.81   0.000     .2654487    .3829
> 575
---------------+------------------------------------------------------------
> ---
        sigma_u |          0
        sigma_e |  .07014661
            rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ---

1130 . estimates store rk_3

1131 .
1132 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Telecommunications", vc
> e(robust)
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =         62
Group variable: ric                             Number of groups  =         13

R-sq:                                           Obs per group:
     within  = 0.1668                                         min =          4
     between = 0.9320                                         avg =        4.8
     overall = 0.6513                                         max =          5

                                                Wald chi2(11)     =   48237.67
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0000

                                  (Std. Err. adjusted for 13 clusters in r
> ic)
---------------+------------------------------------------------------------
> ---
               |               Robust
    sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
---------------+------------------------------------------------------------
> ---
    _Iyear_2016 |   .0028626   .0313277     0.09   0.927    -.0585386    .0642
> 638
    _Iyear_2017 |  -.0319595   .0339741    -0.94   0.347    -.0985476    .0346
> 286
    _Iyear_2018 |   .0052413   .0444453     0.12   0.906    -.0818699    .0923
> 525
    _Iyear_2019 |   .0512137   .0372489     1.37   0.169    -.0217927    .1242
> 202
```

```
    dummy_ESGAA |  -.1336563   .0330532    -4.04   0.000    -.1984393   -.0688
> 733
    dummy_ESGBB |  -.0490376   .0227124    -2.16   0.031     -.093553   -.0045
> 221
    dummy_ESGCC |  -.0149915   .0235704    -0.64   0.525    -.0611887    .0312
> 057
         mktcap |  -6.68e-07   1.05e-07    -6.35   0.000    -8.74e-07   -4.62e
> -07
        debtequ |   .0234705   .0047949     4.89   0.000     .0140728    .0328
> 683
revenuepershare |  -.0010805   .0000928   -11.65   0.000    -.0012623   -.0008
> 987
   currentratio |   .0020046   .0057115     0.35   0.726    -.0091897     .013
> 199
          _cons |   .3176206   .0288631    11.00   0.000       .26105    .3741
> 913
------------------+------------------------------------------------------------
> ----
        sigma_u |          0
        sigma_e |  .07097836
            rho |          0   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

1133 . estimates store rk_4

1134 .
1135 . ** Average returns-rf
1136 .
1137 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
> rshare currentratio if icbindustryname== "Telecommunications", vce(robust)

Linear regression                               Number of obs     =         62
                                                F(6, 54)          =          .
                                                Prob > F          =          .
                                                R-squared         =     0.1537
                                                Root MSE          =     .29135
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.3028564   .1050623    -2.88   0.006    -.5134935   -.0922
> 192
  dummy_ESGB |  -.2411309   .1139287    -2.12   0.039    -.4695441   -.0127
> 176
  dummy_ESGC |  -.0951242   .1135722    -0.84   0.406    -.3228227    .1325
> 744
      mktcap |   8.40e-07   3.75e-07     2.24   0.029     8.94e-08    1.59e
> -06
     debtequ |  -.0259505   .0254821    -1.02   0.313     -.077039    .0251
> 381
revenuepersh |   .0010727    .001147     0.94   0.354    -.0012269    .0033
> 723
 currentrati |   .0153019   .0243355     0.63   0.532    -.0334877    .0640
> 916
       _cons |   .1786038   .1473387     1.21   0.231    -.1167926    .4740
> 001
------------------------------------------------------------------------------
> ----
```

```
1138 . estimates store rk_5

1139 .
1140 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Telecommunications", vce(robust)

Linear regression                               Number of obs     =         62
                                                F(6, 54)          =          .
                                                Prob > F          =          .
                                                R-squared         =     0.1391
                                                Root MSE          =     .29386
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
 dummy_ESGAA |  -.2877839   .1028706    -2.80   0.007     -.494027   -.0815
> 409
 dummy_ESGBB |  -.2006548   .1130813    -1.77   0.082    -.4273691    .0260
> 596
 dummy_ESGCC |  -.1133259   .1098225    -1.03   0.307    -.3335067    .1068
> 548
      mktcap |   3.92e-07   4.19e-07     0.93   0.355    -4.49e-07    1.23e
> -06
     debtequ |  -.0230192   .0253652    -0.91   0.368    -.0738735     .027
> 835
revenuepershare |   .0012507   .0011211     1.12   0.270     -.000997    .0034
> 984
currentratio |   .0192218   .0234751     0.82   0.416    -.0278428    .0662
> 865
       _cons |   .1557199   .1432752     1.09   0.282    -.1315295    .4429
> 693
------------------------------------------------------------------------------
> ----

1141 . estimates store rk_6

1142 .
1143 . **Treynor Ratio
1144 .
1145 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Telecommunications", vce(robust)

Linear regression                               Number of obs     =         59
                                                F(6, 51)          =          .
                                                Prob > F          =          .
                                                R-squared         =     0.2630
                                                Root MSE          =     .44481
```

```
------------------------------------------------------------------------------
> ----
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
  dummy_ESGA |  -.3701893   .2035064    -1.82   0.075    -.7787455    .0383
> 669
  dummy_ESGB |   -.379026   .1923628    -1.97   0.054    -.7652105    .0071
> 585
  dummy_ESGC |  -.1822862   .1861434    -0.98   0.332    -.5559846    .1914
> 123
      mktcap |   1.60e-06   6.01e-07     2.66   0.010     3.91e-07    2.81e
> -06
     debtequ |  -.0281626   .0256261    -1.10   0.277    -.0796092     .023
> 284
revenuepersh~e |   .0049919   .0022631     2.21   0.032     .0004485    .0095
> 353
currentratio |   .0286328   .0270268     1.06   0.294    -.0256257    .0828
> 913
       _cons |   .1610725   .2662277     0.61   0.548    -.3734019    .6955
> 469
------------------------------------------------------------------------------
> ----
```

```
1146 . estimates store rk_7

1147 .
1148 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
> nuepershare currentratio if icbindustryname=="Telecommunications", vce(robus
> t)

Linear regression                               Number of obs     =         59
                                                F(6, 51)          =          .
                                                Prob > F          =          .
                                                R-squared         =     0.2559
                                                Root MSE          =     .44694
```

```
------------------------------------------------------------------------------
> ------------------------------------------------------------------------------
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ------------------------------------------------------------------------------
  dummy_ESGAA |  -.3498225   .1994758    -1.75   0.085    -.7502869    .0506
> 418
  dummy_ESGBB |  -.3413131   .1849639    -1.85   0.071    -.7126436    .0300
> 174
  dummy_ESGCC |  -.2061605   .1842205    -1.12   0.268    -.5759986    .1636
> 776
       mktcap |   1.00e-06   6.09e-07     1.64   0.107    -2.23e-07    2.22e
> -06
      debtequ |  -.0236192    .024634    -0.96   0.342     -.073074    .0258
> 357
revenuepershare |   .0052538   .0022173     2.37   0.022     .0008024    .0097
> 051
 currentratio |   .0338687   .0264465     1.28   0.206    -.0192249    .0869
> 623
        _cons |   .1297135   .2594518     0.50   0.619    -.3911578    .6505
> 849
------------------------------------------------------------------------------
> ------------------------------------------------------------------------------

1149 . estimates store rk_8

1150 .
1151 . esttab rk_1 rk_2 rk_7 rk_8 rk_3 rk_4 using SR_Estimations.rtf, r2 se star(*
> 0.10 ** 0.05 *** 0.01) append modelwidth(6)
(output written to SR_Estimations.rtf)

1152 . esttab rk_1 rk_2 rk_7 rk_8 rk_3 rk_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> --------------------------------
                      (1)             (2)             (3)             (4)
>         (5)             (6)
              SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
>  sd_returns      sd_returns
------------------------------------------------------------------------------
> --------------------------------
dummy_ESGA         -0.931***                       -0.370*
>      -0.137***
                  (0.327)                         (0.204)
>    (0.0331)
```

```
dummy_ESGB          -0.808**                        -0.379*
>     -0.0590***
                   (0.376)                         (0.192)
>    (0.0227)

dummy_ESGC          -0.0375                         -0.182
>     -0.0105
                   (0.368)                         (0.186)
>    (0.0232)

mktcap          0.00000449**    0.00000211      0.00000160**    0.00000100    -
> 0.000000515*** -0.000000668***
              (0.00000203)    (0.00000202)    (0.000000601)    (0.000000609)
>  (0.000000126)    (0.000000105)

debtequ             -0.0720         -0.0566         -0.0282         -0.0236
>      0.0225***       0.0235***
                  (0.0708)        (0.0696)        (0.0256)        (0.0246)
>   (0.00489)       (0.00479)

revenueper~e        0.00865*        0.00953**       0.00499**       0.00525**
>    -0.00113***     -0.00108***
                 (0.00476)       (0.00473)       (0.00226)       (0.00222)
> (0.0000999)     (0.0000928)

currentratio        0.0438          0.0631          0.0286          0.0339
>    0.000847         0.00200
                  (0.0921)        (0.0881)        (0.0270)        (0.0264)
>   (0.00577)       (0.00571)

dummy_ESGAA                         -0.854***                       -0.350*
>                     -0.134***
                                   (0.318)                         (0.199)
>                   (0.0331)

dummy_ESGBB                         -0.625*                         -0.341*
>                    -0.0490**
                                   (0.370)                         (0.185)
>                   (0.0227)

dummy_ESGCC                         -0.124                          -0.206
>                    -0.0150
                                   (0.350)                         (0.184)
>                   (0.0236)
```

```
_Iyear_2016
>     0.00359         0.00286

>    (0.0309)        (0.0313)

_Iyear_2017
>     -0.0323         -0.0320

>    (0.0335)        (0.0340)

_Iyear_2018
>     0.00765         0.00524

>    (0.0412)        (0.0444)

_Iyear_2019
>      0.0502          0.0512

>    (0.0382)        (0.0372)

_cons               0.363           0.249           0.161           0.130
>       0.324***        0.318***
                   (0.490)         (0.475)         (0.266)         (0.259)
>    (0.0300)        (0.0289)
─────────────────────────────────────────────────────────────────────────────
> ──────────────────────────
N                      62              62              59              59
>          62              62
R-sq                0.205           0.182           0.263           0.256
>
─────────────────────────────────────────────────────────────────────────────
> ──────────────────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1153 .
1154 . ** Graph
```

```
1155 .
1156 . twoway (qfit returns_rf esg if icbindustryname=="Telecommunications", legend
     > (label(1 ESG)))(qfit returns_rf esgcomb if icbindustryname=="Telecommunicati
     > ons", legend(label(2 ESG Combined))), title("Telecommunications: Excess Retu
     > rns per ESG Score")

1157 . graph export Telecommunications.pdf,replace
     (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
     > roject/Telecommunications.pdf written in PDF format)

1158 .
1159 . /*
     > twoway (qfit returns_rf esg if icbindustryname=="Telecommunications"), title
     > ("Telecommunications: ESG & Excess Returns")
     > graph export Telecommunications_ESG.pdf,replace
     >
     > twoway (qfit returns_rf esgcomb if icbindustryname=="Telecommunications"), t
     > itle("Telecommunications: ESG Combined & Excess Returns")
     > graph export Telecommunications_ESGcomb.pdf,replace
     > */
1160 .
1161 . ////////////Regressions for Utilities (23-24) L /////////////
     >
1162 . //Fama-French 3 Factor
1163 .
1164 . ** ESG
1165 .
1166 . xi: reg returns_rf mktrf SMB HML dummy_ESGA dummy_ESGB dummy_ESGC if icbindu
     > stryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        262
                                                F(6, 255)         =      18.59
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2760
                                                Root MSE          =     .17888

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4824921   .1392582     3.46   0.001     .2082494    .7567348
         SMB |   1.264521   .7696079     1.64   0.102    -.2510759    2.780118
         HML |   .0200829   .2426779     0.08   0.934    -.4578252    .4979909
   dummy_ESGA |  -.0002325    .068897    -0.00   0.997    -.1359121    .1354471
   dummy_ESGB |   .0374818   .0277263     1.35   0.178    -.0171199    .0920834
   dummy_ESGC |   .0462046   .0297104     1.56   0.121    -.0123044    .1047136
        _cons |   .0714822   .0320644     2.23   0.027     .0083374     .134627
------------------------------------------------------------------------------
```

```
1167 . estimates store r23_1

1168 .
1169 . xi: reg returns_rf mktrf SMB HML dummy_ESGB dummy_ESGC dummy_ESGD if icbindu
     > stryname=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.63
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2764
                                                     Root MSE          =     .17883

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4815175   .1395999     3.45   0.001     .2066019    .7564332
         SMB |   1.277588   .7906252     1.62   0.107    -.2793984    2.834575
         HML |   .0177572   .2486027     0.07   0.943    -.4718188    .5073332
   dummy_ESGB |   .0291263   .0553569     0.53   0.599    -.0798886    .1381411
   dummy_ESGC |   .0377988   .0568172     0.67   0.506    -.0740918    .1496895
   dummy_ESGD |  -.0171513   .0603504    -0.28   0.776        -.136    .1016974
        _cons |   .0801843    .060615     1.32   0.187    -.0391854     .199554
------------------------------------------------------------------------------

1170 . estimates store r24_1

1171 .
1172 . ** ESG combined
1173 .
1174 . xi: reg returns_rf mktrf SMB HML dummy_ESGAA dummy_ESGBB dummy_ESGCC if icbi
     > ndustryname=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.60
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2760
                                                     Root MSE          =     .17889
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4900246	.1377451	3.56	0.000	.2187617	.7612875
SMB	1.248904	.7475176	1.67	0.096	-.2231904	2.720998
HML	.0257402	.2329295	0.11	0.912	-.4329703	.4844507
dummy_ESGAA	.0828016	.07512	1.10	0.271	-.065133	.2307363
dummy_ESGBB	.0327563	.0278963	1.17	0.241	-.0221801	.0876928
dummy_ESGCC	.0322666	.0304621	1.06	0.290	-.0277226	.0922559
_cons	.0707022	.0318727	2.22	0.027	.007935	.1334695

```
1175 . estimates store r23_2

1176 .
1177 . xi: reg returns_rf mktrf SMB HML dummy_ESGBB dummy_ESGCC dummy_ESGDD if icbi
> ndustryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        262
                                                F(6, 255)         =      18.61
                                                Prob > F          =     0.0000
                                                R-squared         =     0.2765
                                                Root MSE          =     .17882
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4861096	.1384657	3.51	0.001	.2134276	.7587917
SMB	1.351366	.7764107	1.74	0.083	-.1776275	2.88036
HML	.000849	.2414991	0.00	0.997	-.4747377	.4764357
dummy_ESGBB	-.0392815	.0574074	-0.68	0.494	-.1523344	.0737715
dummy_ESGCC	-.0399951	.058829	-0.68	0.497	-.1558478	.0758575
dummy_ESGDD	-.0809758	.0621831	-1.30	0.194	-.2034336	.041482
_cons	.1445814	.0634867	2.28	0.024	.0195564	.2696065

```
1178 . estimates store r24_2

1179 .
1180 . ** E
1181 .
1182 . xi: reg returns_rf mktrf SMB HML dummy_EA dummy_EB dummy_EC if icbindustryna
     > me=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.69
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2753
                                                     Root MSE          =     .17897

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4727255   .1385124     3.41   0.001     .1999515    .7454995
         SMB |   1.385286   .7659091     1.81   0.072    -.1230268    2.893599
         HML |  -.0121537   .2414855    -0.05   0.960    -.4877135    .4634062
    dummy_EA |  -.0193081   .0420985    -0.46   0.647    -.1022131     .063597
    dummy_EB |   .0309473   .0245713     1.26   0.209    -.0174413    .0793359
    dummy_EC |  -.0027699   .0285661    -0.10   0.923    -.0590255    .0534857
       _cons |   .1014603   .0287495     3.53   0.000     .0448437     .158077
------------------------------------------------------------------------------

1183 . estimates store r23_3

1184 .
1185 . xi: reg returns_rf mktrf SMB HML dummy_EB dummy_EC dummy_ED if icbindustryna
     > me=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.65
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2749
                                                     Root MSE          =     .17903
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4721377	.1387439	3.40	0.001	.1989078	.7453676
SMB	1.368451	.7796788	1.76	0.080	-.1669785	2.903881
HML	-.007904	.2461502	-0.03	0.974	-.4926502	.4768423
dummy_EB	.0459768	.0358374	1.28	0.201	-.0245982	.1165518
dummy_EC	.0122965	.0385164	0.32	0.750	-.0635542	.0881473
dummy_ED	.0135275	.0402239	0.34	0.737	-.0656859	.0927409
_cons	.0862531	.0406761	2.12	0.035	.0061492	.1663569

```
1186 . estimates store r24_3

1187 .
1188 . ** S
1189 .
1190 . xi: reg returns_rf mktrf SMB HML dummy_SA dummy_SB dummy_SC if icbindustryna
     > me=="Utilities", vce(robust)
```

Linear regression

Number of obs	=	262
F(6, 255)	=	19.19
Prob > F	=	0.0000
R-squared	=	0.2814
Root MSE	=	.17822

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4955233	.1368388	3.62	0.000	.2260452	.7650014
SMB	1.223944	.7493496	1.63	0.104	-.2517579	2.699646
HML	.0241356	.2346297	0.10	0.918	-.4379231	.4861943
dummy_SA	-.0543256	.0639759	-0.85	0.397	-.180314	.0716629
dummy_SB	.0286441	.0309996	0.92	0.356	-.0324038	.0896919
dummy_SC	.036285	.0282078	1.29	0.199	-.0192649	.0918348
_cons	.0805175	.0333229	2.42	0.016	.0148944	.1461407

```
1191 . estimates store r23_4

1192 .
1193 . xi: reg returns_rf mktrf SMB HML dummy_SB dummy_SC dummy_SD if icbindustryna
     > me=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.99
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2789
                                                     Root MSE          =     .17852

------------------------------------------------------------------------------
             |               Robust
  returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       mktrf |   .4922514   .1373997     3.58   0.000     .2216687    .7628341
         SMB |   1.205826   .7499086     1.61   0.109    -.2709766    2.682629
         HML |   .0299191   .2353057     0.13   0.899    -.4334709    .4933091
    dummy_SB |   .0590571   .0504226     1.17   0.243    -.0402407    .1583549
    dummy_SC |   .0666195   .0484885     1.37   0.171    -.0288695    .1621085
    dummy_SD |   .0262378   .0529307     0.50   0.621    -.0779992    .1304748
       _cons |   .0503503   .0479012     1.05   0.294    -.0439821    .1446826
------------------------------------------------------------------------------

1194 . estimates store r24_4

1195 .
1196 . ** G
1197 .
1198 . xi: reg returns_rf mktrf SMB HML dummy_GA dummy_GB dummy_GC if icbindustryna
     > me=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        262
                                                     F(6, 255)         =      18.39
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.2712
                                                     Root MSE          =     .17947
```

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.4850388	.1399878	3.46	0.001	.2093593	.7607182
SMB	1.336051	.764881	1.75	0.082	-.1702375	2.842339
HML	-.0022009	.239391	-0.01	0.993	-.4736362	.4692344
dummy_GA	-.0280335	.0371938	-0.75	0.452	-.1012796	.0452127
dummy_GB	-.0301864	.0327462	-0.92	0.357	-.0946738	.034301
dummy_GC	-.0468853	.0375299	-1.25	0.213	-.1207932	.0270227
_cons	.132969	.0362571	3.67	0.000	.0615676	.2043705

```
1199 . estimates store r23_5

1200 .
1201 . xi: reg returns_rf mktrf SMB HML dummy_GB dummy_GC dummy_GD if icbindustryna
> me=="Utilities", vce(robust)
```

Linear regression

Number of obs	=	262
F(6, 255)	=	18.62
Prob > F	=	0.0000
R-squared	=	0.2715
Root MSE	=	.17944

returns_rf	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
mktrf	.486023	.1400346	3.47	0.001	.2102514	.7617946
SMB	1.297813	.7713017	1.68	0.094	-.2211194	2.816746
HML	.0066891	.2407493	0.03	0.978	-.467421	.4807992
dummy_GB	-.0026122	.0277531	-0.09	0.925	-.0572667	.0520423
dummy_GC	-.0194767	.0332183	-0.59	0.558	-.0848939	.0459406
dummy_GD	.0352614	.0420665	0.84	0.403	-.0475807	.1181034
_cons	.104862	.0337252	3.11	0.002	.0384466	.1712775

```
1202 . estimates store r24_5

1203 .
1204 . ** Final
1205 .
1206 . esttab r23_1 r23_2 r23_3 r23_4 r23_5 using FF_Estimations.rtf, r2 se star(*
     > 0.10 ** 0.05 *** 0.01) append modelwidth(8)
     (output written to FF_Estimations.rtf)

1207 . esttab r23_1 r23_2 r23_3 r23_4 r23_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

     ──────────────────────────────────────────────────────────────────────────────
     > ──────────────
                            (1)             (2)             (3)             (4)
     >         (5)
                     returns_rf      returns_rf      returns_rf      returns_rf
     >  returns_rf
     ──────────────────────────────────────────────────────────────────────────────
     > ──────────────
     mktrf                0.482***        0.490***        0.473***        0.496***
     >       0.485***
                         (0.139)         (0.138)         (0.139)         (0.137)
     >     (0.140)

     SMB                    1.265           1.249*          1.385*          1.224
     >       1.336*
                         (0.770)         (0.748)         (0.766)         (0.749)
     >     (0.765)

     HML                  0.0201          0.0257         -0.0122          0.0241
     >    -0.00220
                         (0.243)         (0.233)         (0.241)         (0.235)
     >     (0.239)

     dummy_ESGA        -0.000232
     >
                       (0.0689)
     >

     dummy_ESGB           0.0375
     >
                       (0.0277)
     >

     dummy_ESGC           0.0462
     >
                       (0.0297)
     >
```

dummy_ESGAA	0.0828			
	(0.0751)			
dummy_ESGBB	0.0328			
	(0.0279)			
dummy_ESGCC	0.0323			
	(0.0305)			
dummy_EA		-0.0193		
		(0.0421)		
dummy_EB		0.0309		
		(0.0246)		
dummy_EC		-0.00277		
		(0.0286)		
dummy_SA			-0.0543	
			(0.0640)	
dummy_SB			0.0286	
			(0.0310)	
dummy_SC			0.0363	
			(0.0282)	

```
dummy_GA
>     -0.0280

>    (0.0372)

dummy_GB
>     -0.0302

>    (0.0327)

dummy_GC
>     -0.0469

>    (0.0375)

_cons              0.0715**        0.0707**         0.101***        0.0805**
>       0.133***
                  (0.0321)        (0.0319)        (0.0287)        (0.0333)
>    (0.0363)
------------------------------------------------------------------------------
> ──────────────
N                     262             262             262             262
>         262
R-sq                0.276           0.276           0.275           0.281
>       0.271
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1208 . esttab r24_1 r24_2 r24_3 r24_4 r24_5, r2 se star(* 0.10 ** 0.05 *** 0.01)

------------------------------------------------------------------------------
> ──────────────
                      (1)             (2)             (3)             (4)
>         (5)
               returns_rf      returns_rf      returns_rf      returns_rf
>  returns_rf
------------------------------------------------------------------------------
> ──────────────
mktrf              0.482***        0.486***        0.472***        0.492***
>       0.486***
                  (0.140)         (0.138)         (0.139)         (0.137)
>     (0.140)
```

SMB	1.278	1.351*	1.368*	1.206	1.298*
	(0.791)	(0.776)	(0.780)	(0.750)	(0.771)
HML	0.0178	0.000849	-0.00790	0.0299	0.00669
	(0.249)	(0.241)	(0.246)	(0.235)	(0.241)
dummy_ESGB	0.0291				
	(0.0554)				
dummy_ESGC	0.0378				
	(0.0568)				
dummy_ESGD	-0.0172				
	(0.0604)				
dummy_ESGBB		-0.0393			
		(0.0574)			
dummy_ESGCC		-0.0400			
		(0.0588)			
dummy_ESGDD		-0.0810			
		(0.0622)			
dummy_EB			0.0460		
			(0.0358)		

dummy_EC		0.0123	
		(0.0385)	
dummy_ED		0.0135	
		(0.0402)	
dummy_SB			0.0591
			(0.0504)
dummy_SC			0.0666
			(0.0485)
dummy_SD			0.0262
			(0.0529)
dummy_GB			
	-0.00261		
	(0.0278)		
dummy_GC			
	-0.0195		
	(0.0332)		
dummy_GD			
	0.0353		
	(0.0421)		

```
_cons              0.0802          0.145**        0.0863**        0.0504
>       0.105***
                  (0.0606)        (0.0635)        (0.0407)        (0.0479)
>    (0.0337)
------------------------------------------------------------------------------
> ──────────────
N                     262             262             262             262
>         262
R-sq                0.276           0.277           0.275           0.279
>       0.271
------------------------------------------------------------------------------
> ──────────────
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1209 .
1210 . //Sharpe Ratio
1211 .
1212 . xi: reg SharpeRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuep
> ershare currentratio if icbindustryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        254
                                                F(7, 246)         =       3.22
                                                Prob > F          =     0.0028
                                                R-squared         =     0.0866
                                                Root MSE          =      1.044

------------------------------------------------------------------------------
> ──────
             |               Robust
 SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ──────
  dummy_ESGA |  -.3796404   .2963349    -1.28   0.201    -.9633178    .2040
> 369
  dummy_ESGB |   .0284203   .1953719     0.15   0.884    -.3563948    .4132
> 353
  dummy_ESGC |   .1789155   .1878653     0.95   0.342    -.1911142    .5489
> 453
     mktcap  |   .0000166   5.22e-06     3.17   0.002     6.27e-06    .0000
> 268
    debtequ  |  -.1090765   .0518242    -2.10   0.036    -.2111522   -.0070
> 008
revenuepershare |  -.0054864   .0051691    -1.06   0.290    -.0156677    .0046
> 948
currentratio |   .1206004   .1842868     0.65   0.513    -.2423809    .4835
> 818
       _cons |   .7110719   .2565091     2.77   0.006     .2058377    1.216
```

```
> 306
-------------------+----------------------------------------------------------
> ----

1213 . estimates store rl_1

1214 .
1215 . xi: reg SharpeRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reven
> uepershare currentratio if icbindustryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        254
                                                F(7, 246)         =       2.72
                                                Prob > F          =     0.0099
                                                R-squared         =     0.0736
                                                Root MSE          =     1.0514

-------------------+----------------------------------------------------------
> ----
                   |               Robust
    SharpeRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------------+----------------------------------------------------------
> ----
    dummy_ESGAA |  -.0194104   .3198121    -0.06   0.952    -.6493296    .6105
> 088
    dummy_ESGBB |   .0816261   .1972493     0.41   0.679    -.3068867     .470
> 139
    dummy_ESGCC |   .1229578   .1865267     0.66   0.510    -.2444354     .490
> 351
         mktcap |   .0000128   4.98e-06     2.58   0.010     3.04e-06    .0000
> 227
        debtequ |  -.1337145   .0525053    -2.55   0.011    -.2371319   -.0302
> 971
revenuepershare |  -.0072572   .0052239    -1.39   0.166    -.0175465     .003
> 032
   currentratio |   .1228314    .184829     0.66   0.507    -.2412177    .4868
> 805
          _cons |   .8093472   .2593269     3.12   0.002     .2985628    1.320
> 132
-------------------+----------------------------------------------------------
> ----
```

```
1216 . estimates store rl_2

1217 .
1218 . ** STD regression
1219 .
1220 . xi: xtreg sd_returns i.year dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ
     > revenuepershare currentratio if icbindustryname=="Utilities", vce(robust)
     i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

     Random-effects GLS regression                   Number of obs     =       257
     Group variable: ric                             Number of groups  =        52

     R-sq:                                           Obs per group:
          within  = 0.3375                                         min =         3
          between = 0.3475                                         avg =       4.9
          overall = 0.3098                                         max =         5

                                                     Wald chi2(11)     =     96.16
     corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                        (Std. Err. adjusted for 52 clusters in r
     > ic)
     ----------------+-----------------------------------------------------------
     > ----
                     |               Robust
          sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
     > al]
     ----------------+-----------------------------------------------------------
     > ----
         _Iyear_2016 |    .004849    .010426     0.47   0.642    -.0155856    .0252
     > 835
         _Iyear_2017 |  -.0602468   .0114209    -5.28   0.000    -.0826312   -.0378
     > 623
         _Iyear_2018 |  -.0093658   .0117582    -0.80   0.426    -.0324114    .0136
     > 798
         _Iyear_2019 |   .0037641   .0167916     0.22   0.823    -.0291469    .0366
     > 751
          dummy_ESGA |   .0249398   .0356737     0.70   0.484    -.0449792    .0948
     > 589
          dummy_ESGB |  -.0003558   .0138707    -0.03   0.980    -.0275419    .0268
     > 302
          dummy_ESGC |   .0054587     .01227     0.44   0.656    -.0185901    .0295
     > 075
              mktcap |  -1.60e-06   8.48e-07    -1.89   0.059    -3.26e-06    6.23e
     > -08
             debtequ |    .037694   .0148714     2.53   0.011     .0085466    .0668
     > 415
     revenuepershare |   .0004619   .0005537     0.83   0.404    -.0006234    .0015
     > 472
```

```
   currentratio |   .0055617   .0101051     0.55   0.582     -.014244    .0253
> 673
         _cons |   .1335172   .0329509     4.05   0.000     .0689346    .1980
> 997
--------------+----------------------------------------------------------------
> ----
       sigma_u |  .04875321
       sigma_e |  .06211129
           rho |  .38123413   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

1221 . estimates store rl_3

1222 .
1223 . xi: xtreg sd_returns i.year dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debte
> qu revenuepershare currentratio if icbindustryname=="Utilities", vce(robust)
i.year            _Iyear_2015-2019    (naturally coded; _Iyear_2015 omitted)

Random-effects GLS regression                   Number of obs     =       257
Group variable: ric                             Number of groups  =        52

R-sq:                                           Obs per group:
     within  = 0.3442                                         min =         3
     between = 0.3416                                         avg =       4.9
     overall = 0.3134                                         max =         5

                                                Wald chi2(11)     =     94.48
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =    0.0000

                                  (Std. Err. adjusted for 52 clusters in r
> ic)
--------------+----------------------------------------------------------------
> ----
              |               Robust
   sd_returns |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interv
> al]
--------------+----------------------------------------------------------------
> ----
   _Iyear_2016 |   .0047563   .0101365     0.47   0.639    -.0151108    .0246
> 234
   _Iyear_2017 |  -.0610749   .0114003    -5.36   0.000    -.0834191   -.0387
> 308
   _Iyear_2018 |  -.0077648   .0127432    -0.61   0.542    -.0327411    .0172
> 115
   _Iyear_2019 |   .0012677   .0155036     0.08   0.935    -.0291188    .0316
> 542
   dummy_ESGAA |  -.0443879   .0318839    -1.39   0.164    -.1068791    .0181
> 034
```

```
    dummy_ESGBB |  -.0130464     .01451    -0.90   0.369    -.0414854    .0153
> 926
    dummy_ESGCC |   .0102629   .0135265     0.76   0.448    -.0162484    .0367
> 743
         mktcap |  -1.03e-06   4.75e-07    -2.17   0.030    -1.96e-06   -1.00e
> -07
        debtequ |   .0413662   .0159945     2.59   0.010     .0100175    .0727
> 149
revenuepershare |   .0007637   .0006165     1.24   0.215    -.0004446    .0019
> 719
   currentratio |   .0058241   .0101001     0.58   0.564    -.0139718      .02
> 562
          _cons |   .1202492   .0368588     3.26   0.001     .0480072    .1924
> 911
----------------+----------------------------------------------------------------
> ----
        sigma_u |  .05108322
        sigma_e |  .06203151
            rho |  .40410903   (fraction of variance due to u_i)
------------------------------------------------------------------------------
> ----

1224 . estimates store rl_4

1225 .
1226 . ** Average returns-rf
1227 .
1228 . xi: reg returns_rf dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenuepe
> rshare currentratio if icbindustryname== "Utilities", vce(robust)

Linear regression                               Number of obs     =        254
                                                F(7, 246)         =       2.14
                                                Prob > F          =     0.0404
                                                R-squared         =     0.0741
                                                Root MSE          =     .19135

----------------+----------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+----------------------------------------------------------------
> ----
     dummy_ESGA |  -.1102835   .0675326    -1.63   0.104    -.2432992    .0227
> 323
     dummy_ESGB |   .0127203    .038493     0.33   0.741    -.0630976    .0885
> 383
     dummy_ESGC |   .0627026   .0393755     1.59   0.113    -.0148535    .1402
> 588
```

```
         mktcap |   2.46e-06   9.05e-07     2.72   0.007     6.80e-07    4.24e
> -06
        debtequ |   -.008424   .0142679    -0.59   0.555    -.0365268    .0196
> 788
revenuepershare |  -.0004841   .0010002    -0.48   0.629    -.0024541    .0014
> 859
   currentratio |   .0106478   .0237707     0.45   0.655    -.0361723     .057
> 468
          _cons |   .0780916   .0550271     1.42   0.157    -.0302928     .186
> 476
----------------+------------------------------------------------------------
> ----

1229 . estimates store rl_5

1230 .
1231 . xi: reg returns_rf dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ revenu
> epershare currentratio if icbindustryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        254
                                                F(7, 246)         =       1.35
                                                Prob > F          =     0.2259
                                                R-squared         =     0.0379
                                                Root MSE          =     .19505

----------------+------------------------------------------------------------
> ----
                |               Robust
     returns_rf |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
----------------+------------------------------------------------------------
> ----
    dummy_ESGAA |  -.0106684   .0625305    -0.17   0.865    -.1338318     .112
> 495
    dummy_ESGBB |   .0305345   .0383922     0.80   0.427    -.0450849    .1061
> 538
    dummy_ESGCC |   .0448334    .040354     1.11   0.268      -.03465    .1243
> 169
         mktcap |   1.36e-06   8.00e-07     1.70   0.090    -2.14e-07    2.94e
> -06
        debtequ |  -.0157557   .0155162    -1.02   0.311    -.0463173    .0148
> 059
revenuepershare |  -.0010052   .0010422    -0.96   0.336     -.003058    .0010
> 476
   currentratio |   .0118161   .0242292     0.49   0.626    -.0359069    .0595
> 392
          _cons |   .1067156   .0577911     1.85   0.066    -.0071128     .220
> 544
----------------+------------------------------------------------------------
```

```
> ———

1232 . estimates store rl_6

1233 .
1234 . **Treynor Ratio
1235 .
1236 . xi: reg TreynorRatio dummy_ESGA dummy_ESGB dummy_ESGC mktcap debtequ revenue
> pershare currentratio if icbindustryname=="Utilities", vce(robust)

Linear regression                               Number of obs     =        241
                                                F(7, 233)         =       6.36
                                                Prob > F          =     0.0000
                                                R-squared         =     0.1383
                                                Root MSE          =     .53914

——————————————————————————————————————————————————————————————————————————————
> ———
             |               Robust
TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
——————————————————————————————————————————————————————————————————————————————
> ———
  dummy_ESGA |  -.3667189   .1404061    -2.61   0.010    -.6433467   -.0900
> 911
  dummy_ESGB |   .0279141   .0883717     0.32   0.752    -.1461957    .2020
> 239
  dummy_ESGC |    .071744   .0807462     0.89   0.375    -.0873419      .23
> 083
      mktcap |   .0000106   2.85e-06     3.71   0.000     4.96e-06    .0000
> 162
     debtequ |  -.0506039   .0203417    -2.49   0.014    -.0906809   -.0105
> 268
revenuepershare |   .0001747   .0025206     0.07   0.945    -.0047913    .0051
> 407
currentratio |  -.0744811   .0930051    -0.80   0.424    -.2577196    .1087
> 574
       _cons |    .385852   .1149548     3.36   0.001     .1593684    .6123
> 357
——————————————————————————————————————————————————————————————————————————————
> ———
```

```
1237 . estimates store rl_7

1238 .
1239 . xi: reg TreynorRatio dummy_ESGAA dummy_ESGBB dummy_ESGCC mktcap debtequ reve
     > nuepershare currentratio if icbindustryname=="Utilities", vce(robust)

     Linear regression                               Number of obs     =        241
                                                     F(7, 233)         =       5.74
                                                     Prob > F          =     0.0000
                                                     R-squared         =     0.1167
                                                     Root MSE          =     .54587

------------------------------------------------------------------------------
> ----
             |               Robust
   TreynorRatio |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interv
> al]
-------------+----------------------------------------------------------------
> ----
    dummy_ESGAA |   -.258564   .1341072    -1.93   0.055    -.5227816    .0056
> 536
    dummy_ESGBB |   .0387232   .0902944     0.43   0.668    -.1391745     .216
> 621
    dummy_ESGCC |   .0482901   .0810547     0.60   0.552    -.1114036    .2079
> 838
         mktcap |   9.06e-06   2.73e-06     3.32   0.001     3.68e-06    .0000
> 144
        debtequ |  -.0594477   .0213938    -2.78   0.006    -.1015976   -.0172
> 977
revenuepershare |  -.0005586   .0025445    -0.22   0.826    -.0055717    .0044
> 545
   currentratio |  -.0722894   .0930895    -0.78   0.438    -.2556941    .1111
> 154
          _cons |   .4236564   .1172114     3.61   0.000     .1927268     .654
> 586
------------------------------------------------------------------------------
> ----
```

```
1240 . estimates store rl_8

1241 .
1242 . esttab rl_1 rl_2 rl_7 rl_8 rl_3 rl_4 using SR_Estimations.rtf, r2 se star(*
     > 0.10 ** 0.05 *** 0.01) append modelwidth(6)
     (output written to SR_Estimations.rtf)

1243 . esttab rl_1 rl_2 rl_7 rl_8 rl_3 rl_4, r2 se star(* 0.10 ** 0.05 *** 0.01)

     ------------------------------------------------------------------------------
     > ------------------------------
                           (1)             (2)             (3)             (4)
     >         (5)             (6)
                    SharpeRatio     SharpeRatio    TreynorRatio    TreynorRatio
     >  sd_returns      sd_returns
     ------------------------------------------------------------------------------
     > ------------------------------
     dummy_ESGA         -0.380                          -0.367***
     >      0.0249
                       (0.296)                         (0.140)
     >    (0.0357)

     dummy_ESGB          0.0284                          0.0279
     >   -0.000356
                       (0.195)                         (0.0884)
     >    (0.0139)

     dummy_ESGC           0.179                          0.0717
     >     0.00546
                       (0.188)                         (0.0807)
     >    (0.0123)

     mktcap          0.0000166***    0.0000128**     0.0000106***   0.00000906***
     > -0.00000160*    -0.00000103**
                    (0.00000522)    (0.00000498)    (0.00000285)    (0.00000273)    (
     > 0.000000848)    (0.000000475)

     debtequ            -0.109**        -0.134**        -0.0506**       -0.0594***
     >      0.0377**        0.0414***
                      (0.0518)        (0.0525)        (0.0203)        (0.0214)
     >    (0.0149)        (0.0160)

     revenueper~e     -0.00549        -0.00726        0.000175       -0.000559
     >    0.000462        0.000764
                     (0.00517)       (0.00522)       (0.00252)       (0.00254)
     >  (0.000554)      (0.000616)
```

currentratio	0.121	0.123	-0.0745	-0.0723
>	0.00556	0.00582		
	(0.184)	(0.185)	(0.0930)	(0.0931)
>	(0.0101)	(0.0101)		
dummy_ESGAA		-0.0194		-0.259*
>	-0.0444			
		(0.320)		(0.134)
>	(0.0319)			
dummy_ESGBB		0.0816		0.0387
>	-0.0130			
		(0.197)		(0.0903)
>	(0.0145)			
dummy_ESGCC		0.123		0.0483
>	0.0103			
		(0.187)		(0.0811)
>	(0.0135)			
_Iyear_2016				
>	0.00485	0.00476		
>	(0.0104)	(0.0101)		
_Iyear_2017				
>	-0.0602***	-0.0611***		
>	(0.0114)	(0.0114)		
_Iyear_2018				
>	-0.00937	-0.00776		
>	(0.0118)	(0.0127)		
_Iyear_2019				
>	0.00376	0.00127		
>	(0.0168)	(0.0155)		

```
_cons                0.711***        0.809***        0.386***        0.424***
>       0.134***        0.120***
                    (0.257)         (0.259)         (0.115)         (0.117)
>    (0.0330)        (0.0369)
------------------------------------------------------------------------------
> ------------------------------
N                       254             254             241             241
>         257             257
R-sq                  0.087           0.074           0.138           0.117
>
------------------------------------------------------------------------------
> ------------------------------
Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

1244 .
1245 . ** Graph
1246 .
1247 . twoway (qfit returns_rf esg if icbindustryname=="Utilities", legend(label(1
     > ESG)))(qfit returns_rf esgcomb if icbindustryname=="Utilities", legend(label
     > (2 ESG Combined))), title("Utilities: Excess Returns per ESG Score")

1248 . graph export Utilities.pdf,replace
     (file /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Science/P
     > roject/Utilities.pdf written in PDF format)

1249 .
1250 . /*
     > twoway (qfit returns_rf esg if icbindustryname=="Utilities"), title("Utiliti
     > es: ESG & Excess Returns")
     > graph export Utilities_ESG.pdf,replace
     >
     > twoway (qfit returns_rf esgcomb if icbindustryname=="Utilities"), title("Uti
     > lities: ESG Combined & Excess Returns")
     > graph export Utilities_ESGcomb.pdf,replace
     > */
1251 .
     end of do-file

1252 . log close
           name:  <unnamed>
            log:  /Users/sebastiengorgoni/Documents/HEC Master/Semester 4.1/Data Sc
     > ience/Project/Project_Group28.smcl
       log type:  smcl
      closed on:   7 Dec 2020, 15:47:36
------------------------------------------------------------------------------
```