```
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/__  /  / __/ /  / __/
__/ /  / /__/ /  / /__/
          Statistics/Data analysis
```

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__/ /  / /__/ /  / /__/
```
**17.0**
*SE—Standard Edition*

**Statistics and Data Science**    Copyright 1985-2021 StataCorp LLC
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Notes:
      1. Unicode is supported; see help unicode advice.
      2. Maximum number of variables is set to 5,000 but can be increased;
         see help set maxvar.

1 . use "C:\Projects\smwap_project\data\data.dta"

2 . use "C:\Projects\smwap_project\data\data.dta"

3 .
4 . summarize

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ask_price | 199 | 1.000216 | .0002939 | .999602 | 1.001647 |
| ask_size | 199 | 72402.42 | 68153.42 | 18726.52 | 420578.2 |
| asset_turn~r | 198 | .0828578 | .0628637 | -.0026361 | .4081705 |
| bid_price | 199 | .9997458 | .0002246 | .9984756 | 1.00046 |
| bid_size | 199 | 69637.37 | 67610.68 | 20330.03 | 434020.9 |
| cash_divid~o | 194 | -.1607629 | .356061 | -1.937008 | 1.492806 |
| cash_flow_~x | 197 | 9.312822 | 258.788 | -325 | 3597.553 |
| current_ra~o | 189 | 2.75682 | 5.53516 | .323259 | 54.54767 |
| debt_to_eq~o | 195 | -21.15193 | 385.9771 | -5274 | 1002.774 |
| dividends | 199 | 1.343915 | 2.733959 | 0 | 19.05 |
| eps | 199 | 1.912053 | 7.442496 | -10.09 | 70.62 |
| far_price | 199 | 1.001768 | .0147306 | .9966582 | 1.15666 |
| free_cash_~e | 196 | .2300355 | 9.574806 | -129.2406 | 11.56471 |
| gross_prof~n | 198 | .4788709 | .336098 | -2.408377 | .9775461 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| imb_size | 199 | 2633346 | 4438908 | 86460.65 | 3.97e+07 |
| lower_pric~o | 199 | .7281753 | .1478408 | .2370457 | .9390618 |
| matched_size | 199 | 5.57e+07 | 1.11e+08 | 892159.7 | 1.04e+09 |
| near_price | 199 | .9996525 | .0008246 | .9974711 | 1.002254 |
| operating_~s | 196 | .6587828 | 10.32551 | -138.6026 | 18.7871 |
| operating_~c | 185 | .4537358 | 2.563752 | -5.444444 | 32.22857 |
| quick_ratio | 186 | 2.022613 | 4.102645 | .0325283 | 43.16206 |
| rdi_perc | 188 | .2395402 | .2375936 | 0 | .7731016 |
| ref_price | 199 | .9999822 | .0001862 | .9993343 | 1.000859 |
| return_on_~s | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| return_on_~y | 195 | -1.531333 | 20.42478 | -284.8333 | 4.934702 |
| std_to_mea~c | 199 | .1384046 | .0920344 | .0341081 | .61948 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| upper_pric~o | 199 | 1.333908 | .2570515 | 1.096876 | 2.867102 |
| wap | 199 | .9999772 | .0001795 | .999305 | 1.000776 |
```

```
 5 .
 6 . histogram ask_price
   (bin=14, start=.999602, width=.00014611)

 7 .
 8 . qnorm ask_price

 9 .
10 . histogram asset_turnover
   (bin=14, start=-.00263605, width=.02934333)

11 .
12 . qnorm asset_turnover

13 .
14 . histogram ask_size
   (bin=14, start=18726.517, width=28703.692)

15 .
16 . qnorm ask_size

17 .
18 . histogram bid_price
   (bin=14, start=.9984756, width=.00014177)

19 .
20 . qnorm bid_price

21 .
22 . histogram bid_size
   (bin=14, start=20330.027, width=29549.347)

23 .
24 . qnorm bid_size

25 .
26 . histogram cash_dividends_paid_ratio
   (bin=13, start=-1.9370079, width=.26383182)

27 .
28 . qnorm cash_dividends_paid_ratio

29 .
30 . histogram cash_flow_to_capex
   (bin=14, start=-325, width=280.18237)

31 .
32 . qnorm cash_flow_to_capex

33 .
34 . histogram current_ratio
   (bin=13, start=.32325899, width=4.1711084)

35 .
36 . qnorm current_ratio

37 .
38 . histogram debt_to_equity_ratio
   (bin=13, start=-5274, width=482.82874)
```

39 .
40 . qnorm debt_to_equity_ratio

41 .
42 . histogram dividends
   (bin=**14**, start=**0**, width=**1.3607143**)

43 .
44 . qnorm dividends

45 .
46 . histogram eps
   (bin=**14**, start=**-10.09**, width=**5.765**)

47 .
48 . qnorm eps

49 .
50 . histogram far_price
   (bin=**14**, start=**.99665817**, width=**.01142872**)

51 .
52 . qnorm far_price

53 .
54 . histogram free_cash_flow_to_net_income
   (bin=**14**, start=**-129.24062**, width=**10.057523**)

55 .
56 . qnorm free_cash_flow_to_net_income

57 .
58 . histogram gross_profit_margin
   (bin=**14**, start=**-2.4083765**, width=**.24185162**)

59 .
60 . qnorm gross_profit_margin

61 .
62 . histogram imb_flag
   (bin=**14**, start=**-.19845793**, width=**.03768912**)

63 .
64 . qnorm imb_flag

65 .
66 . histogram imb_size
   (bin=**14**, start=**86460.65**, width=**2826593.4**)

67 .
68 . qnorm imb_size

69 .
70 . histogram lower_price_ratio
   (bin=**14**, start=**.23704568**, width=**.05014401**)

71 .
72 . qnorm lower_price_ratio

73 .

 74 . histogram matched_size
    (bin=**14**, start=**892159.74**, width=**74229210**)


 75 .
 76 . qnorm matched_size


 77 .
 78 . histogram near_price
    (bin=**14**, start=**.99747112**, width=**.00034166**)


 79 .
 80 . qnorm near_price


 81 .
 82 . histogram operating_cash_flow_to_sales
    (bin=**14**, start=**-138.60265**, width=**11.242125**)


 83 .
 84 . qnorm operating_cash_flow_to_sales


 85 .
 86 . histogram operating_income_perc
    (bin=**13**, start=**-5.4444444**, width=**2.8979243**)


 87 .
 88 . qnorm operating_income_perc


 89 .
 90 . histogram quick_ratio
    (bin=**13**, start=**.03252826**, width=**3.3176562**)


 91 .
 92 . qnorm quick_ratio


 93 .
 94 . histogram rdi_perc
    (bin=**13**, start=**0**, width=**.05946935**)


 95 .
 96 . qnorm rdi_perc


 97 .
 98 . qnorm ref_price


 99 .
100 . histogram ref_price
    (bin=**14**, start=**.99933434**, width=**.00010894**)


101 .
102 . histogram return_on_assets
    (bin=**14**, start=**-.18663239**, width=**.02790379**)


103 .
104 . qnorm return_on_assets


105 .
106 . histogram return_on_equity
    (bin=**13**, start=**-284.83333**, width=**22.289849**)


107 .

```
108 . histogram std_to_mean_price_perc
    (bin=14, start=.0341081, width=.04181228)

109 .
110 . qnorm std_to_mean_price_perc

111 .
112 . histogram upper_price_ratio
    (bin=14, start=1.0968759, width=.12644468)

113 .
114 . qnorm upper_price_ratio

115 .
116 . histogram target
    (bin=14, start=-.76583493, width=.09648005)

117 .
118 . qnorm target

119 .
120 . histogram wap
    (bin=14, start=.99930497, width=.00010507)

121 .
122 . tabstat ask_price ask_size asset_turnover bid_price bid_size cash_dividends_paid_ratio cash_flow_to_capex current_
    > matched_size near_price operating_cash_flow_to_sales operating_income_perc quick_ratio rdi_perc ref_price return_
```

| Stats | ask_pr~e | ask_size | asset_~r | bid_pr~e | bid_size | cash_d~o | cash_f~x | curren~o | debt_t~o | divide~s | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 1.000216 | 72402.42 | .0828578 | .9997458 | 69637.37 | -.1607629 | 9.312822 | 2.75682 | -21.15193 | 1.343915 | 1.91 |
| SD | .0002939 | 68153.42 | .0628637 | .0002246 | 67610.68 | .356061 | 258.788 | 5.53516 | 385.9771 | 2.733959 | 7.44 |
| CV | .0002939 | .9413142 | .7586934 | .0002246 | .9708966 | -2.214821 | 27.78835 | 2.007806 | -18.24784 | 2.034325 | 3.8 |

| Stats | return~s | return~y | std_to~c | target | upper_~o | wap |
|---|---|---|---|---|---|---|
| Mean | .0130606 | -1.531333 | .1384046 | -.0393863 | 1.333908 | .9999772 |
| SD | .0404022 | 20.42478 | .0920344 | .2109191 | .2570515 | .0001795 |
| CV | 3.093449 | -13.33791 | .664966 | -5.355135 | .1927056 | .0001795 |

```
123 .
124 . drop ask_price bid_price far_price near_price ref_price wap

125 .
126 . rename cash_dividends_paid_ratio cdp_ratio

127 .
128 . rename cash_flow_to_capex cftc

129 .
130 . rename debt_to_equity_ratio dte_ratio

131 .
132 . rename free_cash_flow_to_net_income fcftni

133 .
134 . rename gross_profit_margin gpm
```

```
135 .
136 . rename lower_price_ratio lp_ratio

137 .
138 . rename operating_cash_flow_to_sales ocfts

139 .
140 . rename operating_income_perc oip

141 .
142 . rename return_on_assets roa

143 .
144 . rename return_on_equity roe

145 .
146 . rename std_to_mean_price_perc stmpp

147 .
148 . rename upper_price_ratio up_ratio

149 .
150 . rename quick_ratio q_ratio

151 .
152 . rename rdi_perc rdip

153 .
154 . summarize
```

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ask_size | 199 | 72402.42 | 68153.42 | 18726.52 | 420578.2 |
| asset_turn~r | 198 | .0828578 | .0628637 | -.0026361 | .4081705 |
| bid_size | 199 | 69637.37 | 67610.68 | 20330.03 | 434020.9 |
| cdp_ratio | 194 | -.1607629 | .356061 | -1.937008 | 1.492806 |
| cftc | 197 | 9.312822 | 258.788 | -325 | 3597.553 |
| current_ra~o | 189 | 2.75682 | 5.53516 | .323259 | 54.54767 |
| dte_ratio | 195 | -21.15193 | 385.9771 | -5274 | 1002.774 |
| dividends | 199 | 1.343915 | 2.733959 | 0 | 19.05 |
| eps | 199 | 1.912053 | 7.442496 | -10.09 | 70.62 |
| fcftni | 196 | .2300355 | 9.574806 | -129.2406 | 11.56471 |
| gpm | 198 | .4788709 | .336098 | -2.408377 | .9775461 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| imb_size | 199 | 2633346 | 4438908 | 86460.65 | 3.97e+07 |
| lp_ratio | 199 | .7281753 | .1478408 | .2370457 | .9390618 |
| matched_size | 199 | 5.57e+07 | 1.11e+08 | 892159.7 | 1.04e+09 |
| ocfts | 196 | .6587828 | 10.32551 | -138.6026 | 18.7871 |
| oip | 185 | .4537358 | 2.563752 | -5.444444 | 32.22857 |
| q_ratio | 186 | 2.022613 | 4.102645 | .0325283 | 43.16206 |
| rdip | 188 | .2395402 | .2375936 | 0 | .7731016 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| roe | 195 | -1.531333 | 20.42478 | -284.8333 | 4.934702 |
| stmpp | 199 | .1384046 | .0920344 | .0341081 | .61948 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| up_ratio | 199 | 1.333908 | .2570515 | 1.096876 | 2.867102 |

```
155 .
156 . replace asset_turnover = 0 if missing(asset_turnover)
    (1 real change made)

157 .
158 . replace cdp_ratio = 0 if missing(cdp_ratio)
    (5 real changes made)

159 .
160 . replace cftc = 0 if missing(cftc)
    (2 real changes made)

161 .
162 . summarize
```

|     Variable |  Obs |       Mean |  Std. dev. |        Min |        Max |
|-------------:|-----:|-----------:|-----------:|-----------:|-----------:|
|     ask_size |  199 |   72402.42 |   68153.42 |   18726.52 |   420578.2 |
| asset_turn~r |  199 |   .0824414 |   .0629792 |  -.0026361 |   .4081705 |
|     bid_size |  199 |   69637.37 |   67610.68 |   20330.03 |   434020.9 |
|    cdp_ratio |  199 |  -.1567236 |   .3524403 |  -1.937008 |   1.492806 |
|         cftc |  199 |   9.219225 |   257.4793 |       -325 |   3597.553 |
|  current_ra~o |  189 |    2.75682 |    5.53516 |    .323259 |   54.54767 |
|    dte_ratio |  195 |  -21.15193 |   385.9771 |      -5274 |   1002.774 |
|    dividends |  199 |   1.343915 |   2.733959 |          0 |      19.05 |
|          eps |  199 |   1.912053 |   7.442496 |     -10.09 |      70.62 |
|       fcftni |  196 |   .2300355 |   9.574806 |  -129.2406 |   11.56471 |
|          gpm |  198 |   .4788709 |    .336098 |  -2.408377 |   .9775461 |
|     imb_flag |  199 |  -.0168669 |   .0932345 |  -.1984579 |   .3291898 |
|     imb_size |  199 |    2633346 |    4438908 |   86460.65 |    3.97e+07 |
|     lp_ratio |  199 |   .7281753 |   .1478408 |   .2370457 |   .9390618 |
| matched_size |  199 |    5.57e+07 |    1.11e+08 |   892159.7 |    1.04e+09 |
|         ocfts |  196 |   .6587828 |   10.32551 |  -138.6026 |    18.7871 |
|          oip |  185 |   .4537358 |   2.563752 |  -5.444444 |   32.22857 |
|      q_ratio |  186 |   2.022613 |   4.102645 |   .0325283 |   43.16206 |
|         rdip |  188 |   .2395402 |   .2375936 |          0 |   .7731016 |
|          roa |  199 |   .0130606 |   .0404022 |  -.1866324 |   .2040207 |
|          roe |  195 |  -1.531333 |   20.42478 |  -284.8333 |   4.934702 |
|        stmpp |  199 |   .1384046 |   .0920344 |   .0341081 |     .61948 |
|     stock_id |    0 |            |            |            |            |
|       target |  199 |  -.0393863 |   .2109191 |  -.7658349 |   .5848858 |
|     up_ratio |  199 |   1.333908 |   .2570515 |   1.096876 |   2.867102 |

```
163 .
164 . replace current_ratio = 0 if missing(current_ratio)
    (10 real changes made)

165 .
166 . replace dte_ratio = 0 if missing(dte_ratio)
    (4 real changes made)

167 .
168 . replace fcftni = 0 if missing(fcftni)
    (3 real changes made)

169 .
```

170 . summarize

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ask_size | 199 | 72402.42 | 68153.42 | 18726.52 | 420578.2 |
| asset_turn~r | 199 | .0824414 | .0629792 | -.0026361 | .4081705 |
| bid_size | 199 | 69637.37 | 67610.68 | 20330.03 | 434020.9 |
| cdp_ratio | 199 | -.1567236 | .3524403 | -1.937008 | 1.492806 |
| cftc | 199 | 9.219225 | 257.4793 | -325 | 3597.553 |
| current_ra~o | 199 | 2.618287 | 5.427262 | 0 | 54.54767 |
| dte_ratio | 199 | -20.72677 | 382.07 | -5274 | 1002.774 |
| dividends | 199 | 1.343915 | 2.733959 | 0 | 19.05 |
| eps | 199 | 1.912053 | 7.442496 | -10.09 | 70.62 |
| fcftni | 199 | .2265676 | 9.502035 | -129.2406 | 11.56471 |
| gpm | 198 | .4788709 | .336098 | -2.408377 | .9775461 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| imb_size | 199 | 2633346 | 4438908 | 86460.65 | 3.97e+07 |
| lp_ratio | 199 | .7281753 | .1478408 | .2370457 | .9390618 |
| matched_size | 199 | 5.57e+07 | 1.11e+08 | 892159.7 | 1.04e+09 |
| ocfts | 196 | .6587828 | 10.32551 | -138.6026 | 18.7871 |
| oip | 185 | .4537358 | 2.563752 | -5.444444 | 32.22857 |
| q_ratio | 186 | 2.022613 | 4.102645 | .0325283 | 43.16206 |
| rdip | 188 | .2395402 | .2375936 | 0 | .7731016 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| roe | 195 | -1.531333 | 20.42478 | -284.8333 | 4.934702 |
| stmpp | 199 | .1384046 | .0920344 | .0341081 | .61948 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| up_ratio | 199 | 1.333908 | .2570515 | 1.096876 | 2.867102 |

171 .
172 . replace gpm = 0 if missing(gpm)
     (1 real change made)

173 .
174 . replace ocfts = 0 if missing(ocfts)
     (3 real changes made)

175 .
176 . replace oip = 0 if missing(oip)
     (14 real changes made)

177 .
178 . replace q_ratio = 0 if missing(q_ratio)
     (13 real changes made)

179 .
180 . replace rdip = 0 if missing(rdip)
     (11 real changes made)

181 .
182 . replace roe = 0 if missing(roe)
     (4 real changes made)

183 .
184 . summarize

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| ask_size | 199 | 72402.42 | 68153.42 | 18726.52 | 420578.2 |
| asset_turn~r | 199 | .0824414 | .0629792 | -.0026361 | .4081705 |
| bid_size | 199 | 69637.37 | 67610.68 | 20330.03 | 434020.9 |
| cdp_ratio | 199 | -.1567236 | .3524403 | -1.937008 | 1.492806 |
| cftc | 199 | 9.219225 | 257.4793 | -325 | 3597.553 |
| current_ra~o | 199 | 2.618287 | 5.427262 | 0 | 54.54767 |
| dte_ratio | 199 | -20.72677 | 382.07 | -5274 | 1002.774 |
| dividends | 199 | 1.343915 | 2.733959 | 0 | 19.05 |
| eps | 199 | 1.912053 | 7.442496 | -10.09 | 70.62 |
| fcftni | 199 | .2265676 | 9.502035 | -129.2406 | 11.56471 |
| gpm | 199 | .4764646 | .3369625 | -2.408377 | .9775461 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| imb_size | 199 | 2633346 | 4438908 | 86460.65 | 3.97e+07 |
| lp_ratio | 199 | .7281753 | .1478408 | .2370457 | .9390618 |
| matched_size | 199 | 5.57e+07 | 1.11e+08 | 892159.7 | 1.04e+09 |
| ocfts | 199 | .6488514 | 10.2473 | -138.6026 | 18.7871 |
| oip | 199 | .4218147 | 2.474189 | -5.444444 | 32.22857 |
| q_ratio | 199 | 1.890482 | 3.997204 | 0 | 43.16206 |
| rdip | 199 | .2262992 | .2373312 | 0 | .7731016 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| roe | 199 | -1.500552 | 20.21856 | -284.8333 | 4.934702 |
| stmpp | 199 | .1384046 | .0920344 | .0341081 | .61948 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| up_ratio | 199 | 1.333908 | .2570515 | 1.096876 | 2.867102 |

```
185 .
186 . tabstat ask_size asset_turnover bid_size cdp_ratio cftc current_ratio dividends dte_ratio eps fcftni gpm imb_flag
```

| Stats | ask_size | asset_~r | bid_size | cdp_ra~o | cftc | curren~o | divide~s | dte_ra~o | eps | fcftni | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | 72402.42 | .0824414 | 69637.37 | -.1567236 | 9.219225 | 2.618287 | 1.343915 | -20.72677 | 1.912053 | .2265676 | .476 |
| SD | 68153.42 | .0629792 | 67610.68 | .3524403 | 257.4793 | 5.427262 | 2.733959 | 382.07 | 7.442496 | 9.502035 | .336 |
| CV | .9413142 | .7639268 | .9708966 | -2.248802 | 27.92852 | 2.07283 | 2.034325 | -18.43365 | 3.89241 | 41.93907 | .707 |

```
187 .
188 . gen ask_size_l = log(ask_size + 0.0001)

189 .
190 . gen bid_size_l = log(bid_size + 0.0001)

191 .
192 . gen dividends_l = log(dividends + 0.0001)

193 .
194 . gen imb_size_l = log(imb_size + 0.0001)

195 .
196 . gen matched_size_l = log(matched_size + 0.0001)

197 .
198 . gen q_ratio_l = log(q_ratio + 0.0001)
```

199 .
200 . tabstat ask_size_l  asset_turnover bid_size_l  cdp_ratio cftc current_ratio dividends_l  dte_ratio eps fcftni gpm

| Stats | ask_si~l | asset_~r | bid_si~l | cdp_ra~o | cftc | curren~o | divide~l | dte_ra~o | eps | fcftni | .476 |
|-------|----------|----------|----------|----------|------|----------|----------|----------|-----|--------|------|
| Mean | 10.93778 | .0824414 | 10.89016 | -.1567236 | 9.219225 | 2.618287 | -4.716932 | -20.72677 | 1.912053 | .2265676 | .476 |
| SD | .634274 | .0629792 | .6398245 | .3524403 | 257.4793 | 5.427262 | 4.950701 | 382.07 | 7.442496 | 9.502035 | .336 |
| CV | .0579893 | .7639268 | .0587525 | -2.248802 | 27.92852 | 2.07283 | -1.04956 | -18.43365 | 3.89241 | 41.93907 | .707 |

201 .
202 . histogram q_ratio_l
   (bin=**14**, start=**-9.2103405**, width=**.92680747**)

203 .
204 . qnorm q_ratio_l

205 .
206 . histogram dividends_l
   (bin=**14**, start=**-9.2103405**, width=**.86838663**)

207 .
208 . drop ask_size ask_size_l bid_size bid_size_l imb_size imb_size_l matched_size matched_size_l

209 .
210 . gen asset_turnover_l = log(asset_turnover + 0.0001)
   (1 missing value generated)

211 .
212 . tabstat asset_turnover_l, statistics(mean sd cv)

| Variable | Mean | SD | CV |
|----------|------|-----|-----|
| asset_turn~l | **-2.800493** | **.9589839** | **-.342434** |

213 .
214 . histogram asset_turnover_l
   (bin=**14**, start=**-9.2103405**, width=**.59389395**)

215 .
216 . qnorm asset_turnover_l

217 .
218 . qnorm dividends_l

219 .
220 . drop asset_turnover

221 .
222 . gen up_ratio_l = log(up_ratio + 0.0001)

223 .
224 . summarize

| Variable | Obs | Mean | Std. dev. | Min | Max |
|----------|-----|------|-----------|-----|-----|
| cdp_ratio | **199** | **-.1567236** | **.3524403** | **-1.937008** | **1.492806** |
| cftc | **199** | **9.219225** | **257.4793** | **-325** | **3597.553** |
| current_ra~o | **199** | **2.618287** | **5.427262** | **0** | **54.54767** |
| dte_ratio | **199** | **-20.72677** | **382.07** | **-5274** | **1002.774** |
| dividends | **199** | **1.343915** | **2.733959** | **0** | **19.05** |
| eps | **199** | **1.912053** | **7.442496** | **-10.09** | **70.62** |
| fcftni | **199** | **.2265676** | **9.502035** | **-129.2406** | **11.56471** |
| gpm | **199** | **.4764646** | **.3369625** | **-2.408377** | **.9775461** |
| imb_flag | **199** | **-.0168669** | **.0932345** | **-.1984579** | **.3291898** |
| lp_ratio | **199** | **.7281753** | **.1478408** | **.2370457** | **.9390618** |
| ocfts | **199** | **.6488514** | **10.2473** | **-138.6026** | **18.7871** |
| oip | **199** | **.4218147** | **2.474189** | **-5.444444** | **32.22857** |
| q_ratio | **199** | **1.890482** | **3.997204** | **0** | **43.16206** |

|  |  |  |  |  |  |
|---|---|---|---|---|---|
| rdip | 199 | .2262992 | .2373312 | 0 | .7731016 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| roe | 199 | -1.500552 | 20.21856 | -284.8333 | 4.934702 |
| stmpp | 199 | .1384046 | .0920344 | .0341081 | .61948 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| up_ratio | 199 | 1.333908 | .2570515 | 1.096876 | 2.867102 |
| dividends_l | 199 | -4.716932 | 4.950701 | -9.21034 | 2.947072 |
| q_ratio_l | 199 | -.3886046 | 2.488829 | -9.21034 | 3.764964 |
| asset_turn~l | 198 | -2.800493 | .9589839 | -9.21034 | -.8958253 |
| up_ratio_l | 199 | .2741796 | .1576216 | .0925572 | 1.053337 |

```
225 .
226 . tabstat up_ratio up_ratio_l, statistics(mean sd cv)
```

| Stats | up_ratio | up_rat~l |
|---|---|---|
| Mean | 1.333908 | .2741796 |
| SD | .2570515 | .1576216 |
| CV | .1927056 | .5748845 |

```
227 .
228 . qnorm up_ratio_l

229 .
230 . histogram up_ratio_l
    (bin=14, start=.09255724, width=.06862709)

231 .
232 . drop up_ratio

233 .
234 . gen lp_ratio_l = log(lp_ratio + 0.0001)

235 .
236 . tabstat lp_ratio lp_ratio_l, statistics(mean sd cv)
```

| Stats | lp_ratio | lp_rat~l |
|---|---|---|
| Mean | .7281753 | -.3431855 |
| SD | .1478408 | .2450707 |
| CV | .2030291 | -.7141057 |

```
237 .
238 . qnorm lp_ratio_l

239 .
240 . histogram lp_ratio_l
    (bin=14, start=-1.4390806, width=.09830808)

241 .
242 . gen stmpp_l = log(stmpp + 0.0001)

243 .
244 . tabstat stmpp stmpp_l, statistics(mean sd cv)
```

| Stats | stmpp | stmpp_l |
|---|---|---|
| Mean | .1384046 | -2.152201 |
| SD | .0920344 | .5780384 |
| CV | .664966 | -.2685801 |

```
245 .
246 . qnorm stmpp_l

247 .
248 . histogram stmpp_l
    (bin=14, start=-3.3752928, width=.20689853)

249 .
250 . drop stmpp

251 .
252 . gen gpm_l = log(gpm + 0.0001)
    (4 missing values generated)

253 .
254 . summarize
```

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| cdp_ratio | 199 | -.1567236 | .3524403 | -1.937008 | 1.492806 |
| cftc | 199 | 9.219225 | 257.4793 | -325 | 3597.553 |
| current_ra~o | 199 | 2.618287 | 5.427262 | 0 | 54.54767 |
| dte_ratio | 199 | -20.72677 | 382.07 | -5274 | 1002.774 |
| dividends | 199 | 1.343915 | 2.733959 | 0 | 19.05 |
| eps | 199 | 1.912053 | 7.442496 | -10.09 | 70.62 |
| fcftni | 199 | .2265676 | 9.502035 | -129.2406 | 11.56471 |
| gpm | 199 | .4764646 | .3369625 | -2.408377 | .9775461 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| lp_ratio | 199 | .7281753 | .1478408 | .2370457 | .9390618 |
| ocfts | 199 | .6488514 | 10.2473 | -138.6026 | 18.7871 |
| oip | 199 | .4218147 | 2.474189 | -5.444444 | 32.22857 |
| q_ratio | 199 | 1.890482 | 3.997204 | 0 | 43.16206 |
| rdip | 199 | .2262992 | .2373312 | 0 | .7731016 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| roe | 199 | -1.500552 | 20.21856 | -284.8333 | 4.934702 |
| stock_id | 0 |  |  |  |  |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| dividends_l | 199 | -4.716932 | 4.950701 | -9.21034 | 2.947072 |
| q_ratio_l | 199 | -.3886046 | 2.488829 | -9.21034 | 3.764964 |
| asset_turn~l | 198 | -2.800493 | .9589839 | -9.21034 | -.8958253 |
| up_ratio_l | 199 | .2741796 | .1576216 | .0925572 | 1.053337 |
| lp_ratio_l | 199 | -.3431855 | .2450707 | -1.439081 | -.0627675 |
| stmpp_l | 199 | -2.152201 | .5780384 | -3.375293 | -.4787134 |
| gpm_l | 195 | -1.35095 | 2.258674 | -9.21034 | -.0226075 |

```
255 .
256 . replace gpm_l = 0 if missing(gpm_l)
    (4 real changes made)

257 .
258 . replace asset_turnover_l = 0 if missing(asset_turnover_l)
    (1 real change made)

259 .
260 . tabstat gpm gpm_l , statistics(mean sd cv)
```

| Stats | gpm | gpm_l |
|---|---|---|
| Mean | .4764646 | -1.323795 |
| SD | .3369625 | 2.243808 |
| CV | .7072142 | -1.694981 |

```
261 .
262 . qnorm gpm_l

263 .
264 . histogram gpm_l
    (bin=14, start=-9.2103405, width=.65788146)

265 .
266 . drop gpm

267 .
268 . summarize ocfts, detail
```

                              ocfts
─────────────────────────────────────────────────────────────
      Percentiles      Smallest
 1%    -7.789206       -138.6026
 5%    -1.925926       -7.789206
10%    -.5135763       -6.565657       Obs                199
25%    .5748865        -6.181818       Sum of wgt.        199

50%    1.247591                        Mean          .6488514
                       Largest         Std. dev.       10.2473
75%    1.832362        10.07379
90%    2.778761        10.25603        Variance       105.0073
95%    6.022612        11.49412        Skewness      -12.66383
99%    11.49412        18.7871         Kurtosis       173.1697

```
269 .
270 . summarize fcftni, detail
```

                              fcftni
─────────────────────────────────────────────────────────────
      Percentiles      Smallest
 1%    -13.21625       -129.2406
 5%    -2.728545       -13.21625
10%    -.4635193       -6.711406       Obs                199
25%    .2329532        -6.545455       Sum of wgt.        199

50%    .9271006                        Mean          .2265676
                       Largest         Std. dev.      9.502035
75%    1.340238        7.668383
90%    2.36329         8.984139        Variance       90.28866
95%    3.266667        10.18783        Skewness      -12.80136
99%    10.18783        11.56471        Kurtosis       174.9929

```
271 .
272 . summarize dte_ratio, detail
```

                            dte_ratio
─────────────────────────────────────────────────────────────
      Percentiles      Smallest
 1%    -191.6694       -5274
 5%    -17.41589       -191.6694
10%    -9.793869       -191.6694       Obs                199
25%    -4.211769       -62.15001       Sum of wgt.        199

50%    0                               Mean          -20.72677
                       Largest         Std. dev.        382.07
75%    3.612613        115.1033
90%    13.51499        128.0376        Variance       145977.5
95%    41.85817        154.2254        Skewness      -13.06308
99%    154.2254        1002.774        Kurtosis       181.6763

273 .
274 . summarize current_ratio, detail

```
                          current_ratio
─────────────────────────────────────────────────────────────
        Percentiles      Smallest
  1%            0               0
  5%            0               0
 10%     .6853158               0      Obs                  199
 25%     1.062619               0      Sum of wgt.          199

 50%     1.570608                      Mean            2.618287
                            Largest    Std. dev.       5.427262
 75%      2.59726        13.31207
 90%     4.629812        14.43093      Variance        29.45517
 95%     5.692685        51.60811      Skewness        8.248125
 99%     51.60811        54.54767      Kurtosis        76.45185
```

275 .
276 . gen current_ratio_l = log(current_ratio + 0.0001)

277 .
278 . tabstat current_ratio current_ratio_l, statistics(mean sd cv)

```
     Stats │  curren~o   curren~l
───────────┼──────────────────────
      Mean │  2.618287   .1059837
        SD │  5.427262   2.267817
        CV │   2.07283   21.39779
───────────┴──────────────────────
```

279 .
280 . qnorm current_ratio_l

281 .
282 . histogram current_ratio_l
    (bin=14, start=-9.2103405, width=.94352981)

283 .
284 . drop current_ratio

285 .
286 . summarize cftc, detail

```
                              cftc
─────────────────────────────────────────────────────────────
        Percentiles      Smallest
  1%    -102.7993            -325
  5%    -43.05025       -102.7993
 10%          -25       -88.33333      Obs                  199
 25%    -10.79724       -87.57853      Sum of wgt.          199

 50%    -4.043624                      Mean            9.219225
                            Largest    Std. dev.       257.4793
 75%    -1.196217        32.79553
 90%      .555336        88.33456      Variance         66295.6
 95%     5.048387        162.8333      Skewness        13.69349
 99%     162.8333        3597.553      Kurtosis        191.4962
```

287 .

```
288 . drop lp_ratio

289 .
290 . ssc install winsor
    checking winsor consistency and verifying not already installed...
    all files already exist and are up to date.

291 .
292 . winsor cftc, p(0.02) gen(cftc_w)

293 .
294 . tabstat cftc cftc_w, statistics(mean sd cv)

        Stats │      cftc     cftc_w
    ──────────┼──────────────────────
         Mean │  9.219225  -8.353325
           SD │  257.4793   16.68043
           CV │  27.92852  -1.996862
    ──────────┴──────────────────────

295 .
296 . histogram cftc_w
    (bin=14, start=-87.578531, width=8.5981473)

297 .
298 . qnorm cftc_w

299 .
300 . drop cftc

301 .
302 . winsor dte_ratio, p(0.02) gen(dte_ratio_w)

303 .
304 . qnorm dte_ratio_w

305 .
306 . histogram dte_ratio_w
    (bin=14, start=-62.150012, width=12.660954)

307 .
308 . tabstat dte_ratio dte_ratio_w, statistics(mean sd cv)

        Stats │   dte_ra~o   dte_ra~w
    ──────────┼──────────────────────
         Mean │  -20.72677    2.04289
           SD │     382.07   23.05632
           CV │  -18.43365   11.28613
    ──────────┴──────────────────────

309 .
310 . drop dte_ratio

311 .
312 . winsor fcftni, p(0.02) gen(fcftni_w)

313 .
314 . qnorm fcftni_w

315 .
```

```
316 . histogram fcftni_w
    (bin=14, start=-6.5454545, width=1.0152741)

317 .
318 . tabstat fcftni fcftni_w, statistics(mean sd cv)
```

| Stats | fcftni | fcftni_w |
|---|---|---|
| Mean | .2265676 | .8386299 |
| SD | 9.502035 | 2.024167 |
| CV | 41.93907 | 2.413659 |

```
319 .
320 . drop fcftni

321 .
322 . winsor ocfts, p(0.02) gen(ocfts_w)

323 .
324 . qnorm ocfts_w

325 .
326 . histogram ocfts_w
    (bin=14, start=-6.1818182, width=1.161115)

327 .
328 . winsor roe, p(0.03) gen(roe_w)

329 .
330 . histogram roe_w
    (bin=14, start=-1.4880469, width=.17976034)

331 .
332 . qnorm roe_w

333 .
334 . drop roe

335 .
336 . drop ocfts

337 .
338 . winsor oip, p(0.02) gen(oip_w)

339 .
340 . qnorm oip_w

341 .
342 . histogram oip_w
    (bin=14, start=-1.3292943, width=.25686128)

343 .
344 . drop oip

345 .
346 . drop rdip

347 .
348 . drop dividends
```

```
349 .
350 . drop q_ratio

351 .
352 . winsor eps, p(0.02) gen(eps_w)

353 .
354 . histogram eps_w
    (bin=14, start=-4.92, width=1.5628571)

355 .
356 . qnorm eps_w

357 .
358 . drop eps

359 .
360 . summarize
```

| Variable | Obs | Mean | Std. dev. | Min | Max |
|---|---|---|---|---|---|
| cdp_ratio | 199 | -.1567236 | .3524403 | -1.937008 | 1.492806 |
| imb_flag | 199 | -.0168669 | .0932345 | -.1984579 | .3291898 |
| roa | 199 | .0130606 | .0404022 | -.1866324 | .2040207 |
| stock_id | 0 | | | | |
| target | 199 | -.0393863 | .2109191 | -.7658349 | .5848858 |
| dividends_l | 199 | -4.716932 | 4.950701 | -9.21034 | 2.947072 |
| q_ratio_l | 199 | -.3886046 | 2.488829 | -9.21034 | 3.764964 |
| asset_turn~l | 199 | -2.78642 | .9769423 | -9.21034 | 0 |
| up_ratio_l | 199 | .2741796 | .1576216 | .0925572 | 1.053337 |
| lp_ratio_l | 199 | -.3431855 | .2450707 | -1.439081 | -.0627675 |
| stmpp_l | 199 | -2.152201 | .5780384 | -3.375293 | -.4787134 |
| gpm_l | 199 | -1.323795 | 2.243808 | -9.21034 | 0 |
| current_ra~l | 199 | .1059837 | 2.267817 | -9.21034 | 3.999077 |
| cftc_w | 199 | -8.353325 | 16.68043 | -87.57853 | 32.79553 |
| dte_ratio_w | 199 | 2.04289 | 23.05632 | -62.15001 | 115.1033 |
| fcftni_w | 199 | .8386299 | 2.024167 | -6.545455 | 7.668383 |
| ocfts_w | 199 | 1.27245 | 2.321799 | -6.181818 | 10.07379 |
| roe_w | 199 | -.0171346 | .4220323 | -1.488047 | 1.028598 |
| oip_w | 199 | .2597629 | .5254288 | -1.329294 | 2.266764 |
| eps_w | 199 | 1.362254 | 3.090275 | -4.92 | 16.96 |

```
361 .
362 . tabstat asset_turnover_l cdp_ratio cftc_w current_ratio_l dividends_l dte_ratio_w eps_w fcftni_w gpm_l imb_flag lp
```

| Stats | asset_~l | cdp_ra~o | cftc_w | curren~l | divide~l | dte_ra~w | eps_w | fcftni_w | gpm_l | imb_flag | lp_r |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | -2.78642 | -.1567236 | -8.353325 | .1059837 | -4.716932 | 2.04289 | 1.362254 | .8386299 | -1.323795 | -.0168669 | -.343 |
| SD | .9769423 | .3524403 | 16.68043 | 2.267817 | 4.950701 | 23.05632 | 3.090275 | 2.024167 | 2.243808 | .0932345 | .245 |
| CV | -.3506084 | -2.248802 | -1.996862 | 21.39779 | -1.04956 | 11.28613 | 2.268501 | 2.413659 | -1.694981 | -5.527673 | -.714 |

```
363 .
364 . swilk asset_turnover_l cdp_ratio cftc_w current_ratio_l dividends_l dte_ratio_w eps_w fcftni_w gpm_l imb_flag lp_r

                Shapiro-Wilk W test for normal data
```

| Variable | Obs | W | V | z | Prob>z |
|---|---|---|---|---|---|
| asset_turn~l | 199 | 0.86385 | 20.223 | 6.917 | 0.00000 |
| cdp_ratio | 199 | 0.86903 | 19.454 | 6.827 | 0.00000 |
| cftc_w | 199 | 0.71365 | 42.533 | 8.627 | 0.00000 |
| current_ra~l | 199 | 0.53128 | 69.621 | 9.760 | 0.00000 |
| dividends_l | 199 | 0.82880 | 25.429 | 7.443 | 0.00000 |
| dte_ratio_w | 199 | 0.62408 | 55.838 | 9.253 | 0.00000 |
| eps_w | 199 | 0.71711 | 42.019 | 8.599 | 0.00000 |
| fcftni_w | 199 | 0.78988 | 31.211 | 7.915 | 0.00000 |
| gpm_l | 199 | 0.48608 | 76.335 | 9.972 | 0.00000 |
| imb_flag | 199 | 0.96962 | 4.512 | 3.466 | 0.00026 |

|          |     |         |        |       |         |
|---------:|----:|--------:|-------:|------:|--------:|
| lp_ratio_l | 199 | 0.81895 | 26.892 | 7.572 | 0.00000 |
| ocfts_w | 199 | 0.79812 | 29.986 | 7.823 | 0.00000 |
| oip_w | 199 | 0.85146 | 22.063 | 7.117 | 0.00000 |
| q_ratio_l | 199 | 0.58392 | 61.803 | 9.486 | 0.00000 |
| roa | 199 | 0.85504 | 21.532 | 7.061 | 0.00000 |
| roe_w | 199 | 0.79284 | 30.770 | 7.882 | 0.00000 |
| stmpp_l | 199 | 0.98225 | 2.636 | 2.230 | 0.01288 |
| target | 199 | 0.99045 | 1.418 | 0.804 | 0.21066 |
| up_ratio_l | 199 | 0.78906 | 31.332 | 7.924 | 0.00000 |

365 .

366 . corr asset_turnover_l cdp_ratio cftc_w current_ratio_l dividends_l dte_ratio_w eps_w fcftni_w gpm_l imb_flag lp_ra
(obs=199)

|              | asset_~l | cdp_ra~o | cftc_w | curren~l | divide~l | dte_ra~w | eps_w | fcftni_w | gpm_l | imb_flag | lp_rat~l |    |
|-------------:|---------:|---------:|-------:|---------:|---------:|---------:|------:|---------:|------:|---------:|---------:|----|
| asset_turn~l | 1.0000 | | | | | | | | | | | |
| cdp_ratio | 0.1004 | 1.0000 | | | | | | | | | | |
| cftc_w | 0.0043 | -0.0544 | 1.0000 | | | | | | | | | |
| current_ra~l | 0.3507 | -0.0113 | 0.1897 | 1.0000 | | | | | | | | |
| dividends_l | 0.0190 | -0.5005 | -0.0626 | -0.2721 | 1.0000 | | | | | | | |
| dte_ratio_w | -0.1182 | 0.1152 | -0.0416 | 0.0140 | -0.1341 | 1.0000 | | | | | | |
| eps_w | -0.0206 | -0.0534 | -0.1501 | -0.2038 | 0.2566 | -0.0811 | 1.0000 | | | | | |
| fcftni_w | -0.0134 | -0.1933 | 0.0511 | -0.0630 | 0.0146 | 0.0034 | -0.0261 | 1.0000 | | | | |
| gpm_l | 0.3806 | -0.0568 | 0.1356 | 0.7828 | -0.1670 | -0.0494 | -0.2455 | -0.0410 | 1.0000 | | | |
| imb_flag | -0.0793 | 0.1828 | -0.0315 | -0.0115 | -0.3187 | 0.1532 | -0.1479 | -0.0470 | -0.0191 | 1.0000 | | |
| lp_ratio_l | 0.0893 | -0.2996 | -0.0019 | -0.0437 | 0.4559 | -0.0347 | 0.1163 | 0.0444 | 0.0227 | -0.5024 | 1.0000 | |
| ocfts_w | -0.0333 | -0.3685 | 0.1198 | -0.0720 | 0.1032 | -0.0728 | 0.0658 | 0.8615 | -0.0238 | -0.0550 | 0.1230 | |
| oip_w | 0.1023 | -0.1731 | -0.1028 | 0.0801 | 0.3079 | -0.1112 | 0.1775 | 0.0509 | 0.1866 | -0.1253 | 0.2731 | |
| q_ratio_l | 0.3070 | -0.0064 | 0.1671 | 0.8666 | -0.2368 | -0.0010 | -0.1588 | -0.0556 | 0.6592 | -0.0255 | -0.0293 | - |
| roa | 0.2140 | -0.1252 | -0.3498 | 0.0441 | 0.2357 | -0.0654 | 0.4966 | 0.0884 | 0.0170 | -0.2175 | 0.3397 | |
| roe_w | -0.0207 | 0.0010 | -0.0354 | -0.0111 | -0.0904 | 0.4559 | -0.0095 | 0.0662 | -0.0431 | -0.0047 | 0.0803 | |
| stmpp_l | -0.1292 | 0.3411 | 0.0143 | 0.0381 | -0.5065 | 0.0347 | -0.1304 | -0.0072 | -0.0209 | 0.4909 | -0.8854 | - |
| target | -0.0179 | 0.0038 | 0.1001 | -0.0188 | 0.1020 | -0.0671 | 0.1078 | -0.0832 | -0.0871 | -0.1721 | -0.0372 | - |
| up_ratio_l | -0.1780 | 0.2310 | 0.0402 | 0.0483 | -0.3964 | 0.1269 | -0.2215 | -0.0379 | -0.0094 | 0.5743 | -0.7687 | - |

367 .

368 . helw asset_turnover_l cdp_ratio cftc_w current_ratio_l dividends_l dte_ratio_w eps_w fcftni_w gpm_l imb_flag lp_ra
Przyjeto domyslny poziom wartosci krytycznej wsp. korelacji
r krytyczne= 0.500


*************KROK 1**********


Zmienna centralna wyr▯niona w kroku 1:
up_ratio_l
Zmienne satelitarne odpowiadajace zmiennej up_ratio_l:
 imb_flag lp_ratio_l stmpp_l
Wsp▯czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:
(obs=199)

|            | up_rat~l | imb_flag | lp_rat~l | stmpp_l |
|-----------:|---------:|---------:|---------:|--------:|
| up_ratio_l | 1.0000 | | | |
| imb_flag | 0.5743 | 1.0000 | | |
| lp_ratio_l | -0.7687 | -0.5024 | 1.0000 | |
| stmpp_l | 0.8337 | 0.4909 | -0.8854 | 1.0000 |



*************KROK 2**********

**Zmienna centralna wyr niona w kroku 2:**
**current_ratio_l**
**Zmienne satelitarne odpowiadajace zmiennej current_ratio_l:**
 **gpm_l q_ratio_l**
**Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:**
(obs=199)

|  | curren~l | gpm_l | q_rati~l |
|---|---|---|---|
| current_ra~l | 1.0000 | | |
| gpm_l | 0.7828 | 1.0000 | |
| q_ratio_l | 0.8666 | 0.6592 | 1.0000 |

**\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 3\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyr niona w kroku 3:**
**roa**

**\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 4\*\*\*\*\*\*\*\*\*\***

**Zmienna centralna wyr niona w kroku 4:**
**ocfts_w**
**Zmienne satelitarne odpowiadajace zmiennej ocfts_w:**
 **fcftni_w**
**Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:**
(obs=199)

|  | ocfts_w | fcftni_w |
|---|---|---|
| ocfts_w | 1.0000 | |
| fcftni_w | 0.8615 | 1.0000 |

**\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 5\*\*\*\*\*\*\*\*\*\***

**Zmienna centralna wyr niona w kroku 5:**
**dividends_l**
**Zmienne satelitarne odpowiadajace zmiennej dividends_l:**
 **cdp_ratio**
**Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:**
(obs=199)

|  | divide~l | cdp_ra~o |
|---|---|---|
| dividends_l | 1.0000 | |
| cdp_ratio | -0.5005 | 1.0000 |

**\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 6\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyr niona w kroku 6:**
**dte_ratio_w**

**\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 7\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyr□niona w kroku 7:**
**oip_w**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 8\*\*\*\*\*\*\*\*\*\***


**Zmienna izolowana wyr□niona w kroku 8:**
**cftc_w**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 9\*\*\*\*\*\*\*\*\*\***


**Zmienna izolowana wyr□niona w kroku 9:**
**target**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 10\*\*\*\*\*\*\*\*\*\***


**Zmienna izolowana wyr□niona w kroku 10:**
**asset_turnover_l**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 11\*\*\*\*\*\*\*\*\*\***


**Zmienna izolowana wyr□niona w kroku 11:**
**roe_w**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 12\*\*\*\*\*\*\*\*\*\***


**Zmienna izolowana wyr□niona w kroku 12:**
**eps_w**


**\*\*\*\*\*\*\*\*\*\*\*\*\*\*Podsumowanie \*\*\*\*\*\*\*\*\*\*\***


**Metoda Hellwiga wyr□ni□a 12 zmiennych reprezentant□w**

| Zmienne reprezentanty | Typ zmiennej reprezentanta | Zmienne sat. dla zm.centralnych |
|---:|:---:|---:|
| up_ratio_l | zmienna centralna | imb_flag lp_ratio_l stmpp_l |
| current_ratio_l | zmienna centralna | gpm_l q_ratio_l |
| roa | zmienna izolowana | |
| ocfts_w | zmienna centralna | fcftni_w |
| dividends_l | zmienna centralna | cdp_ratio |
| dte_ratio_w | zmienna izolowana | |
| oip_w | zmienna izolowana | |
| cftc_w | zmienna izolowana | |
| target | zmienna izolowana | |
| asset_turnover_l | zmienna izolowana | |
| roe_w | zmienna izolowana | |
| eps_w | zmienna izolowana | |

```
369 .
370 . egen at_ls = std(asset_turnover_l)

371 .
372 . egen cdp_ratio_s = std(cdp_ratio)

373 .
374 . egen cftc_ws = std(cftc_w)

375 .
376 . egen current_ratio_ls = std(current_ratio_l)

377 .
378 . egen dividends_ls = std(dividends_l)

379 .
380 . egen dte_ratio_ws = std(dte_ratio_w)

381 .
382 . egen eps_ws = std(eps_w)

383 .
384 . egen fcftni_ws = std(fcftni_w)

385 .
386 . egen gpm_ls = std(gpm_l)

387 .
388 . egen imb_flag_s = std(imb_flag)

389 .
390 . egen lp_ratio_ls = std(lp_ratio_l)

391 .
392 . egen ocfts_ws = std(ocfts_w)

393 .
394 . egen oip_ws = std(oip_w)

395 .
396 . egen q_ratio_ls = std(q_ratio_l)

397 .
398 . egen roa_s = std(roa)

399 .
400 . egen roe_ws = std(roe_w)

401 .
402 . egen stmpp_ls = std(stmpp_l)

403 .
404 . egen target_s = std(target)

405 .
406 . egen up_ratio_ls = std(up_ratio_l)

407 .
408 . drop asset_turnover_l cdp_ratio cftc_w current_ratio_l dividends_l dte_ratio_w eps_w fcftni_w gpm_l imb_flag lp_ra
```

409 .
410 . helw at_ls cdp_ratio_s cftc_ws  current_ratio_ls  dividends_ls  dte_ratio_ws  eps_ws  fcftni_ws  gpm_ls  imb_flag_
    Przyjeto domyslny poziom wartosci krytycznej wsp. korelacji
    r krytyczne= 0.500

**************KROK 1**********

Zmienna centralna wyr niona w kroku 1:
up_ratio_ls
Zmienne satelitarne odpowiadajace zmiennej up_ratio_ls:
 imb_flag_s lp_ratio_ls stmpp_ls
Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:
(obs=199)

|              | up_rat~s | imb_fl~s | lp_rat~s | stmpp_ls |
|--------------|----------|----------|----------|----------|
| up_ratio_ls  | 1.0000   |          |          |          |
| imb_flag_s   | 0.5743   | 1.0000   |          |          |
| lp_ratio_ls  | -0.7687  | -0.5024  | 1.0000   |          |
| stmpp_ls     | 0.8337   | 0.4909   | -0.8854  | 1.0000   |

**************KROK 2**********

Zmienna centralna wyr niona w kroku 2:
current_ratio_ls
Zmienne satelitarne odpowiadajace zmiennej current_ratio_ls:
 gpm_ls q_ratio_ls
Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:
(obs=199)

|              | curren~s | gpm_ls | q_rati~s |
|--------------|----------|--------|----------|
| current_ra~s | 1.0000   |        |          |
| gpm_ls       | 0.7828   | 1.0000 |          |
| q_ratio_ls   | 0.8666   | 0.6592 | 1.0000   |

**************KROK 3**********

Zmienna izolowana wyr niona w kroku 3:
roa_s

**************KROK 4**********

Zmienna centralna wyr niona w kroku 4:
ocfts_ws
Zmienne satelitarne odpowiadajace zmiennej ocfts_ws:
 fcftni_ws
Wsp czynniki korelacje zmiennej centralnej i zmiennych satelitarnych:
(obs=199)

|            | ocfts_ws | fcftni~s |
|------------|----------|----------|
| ocfts_ws   | 1.0000   |          |
| fcftni_ws  | 0.8615   | 1.0000   |

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 5\*\*\*\*\*\*\*\*\*\***

**Zmienna centralna wyróniona w kroku 5:**
**dividends_ls**
**Zmienne satelitarne odpowiadajace zmiennej dividends_ls:**
 **cdp_ratio_s**
**Wspóczynniki korelacje zmiennej centralnej i zmiennych satelitarnych:**
**(obs=199)**

|             | divide~s | cdp_ra~s |
|-------------|----------|----------|
| dividends_ls | 1.0000   |          |
| cdp_ratio_s | -0.5005  | 1.0000   |

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 6\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 6:**
**dte_ratio_ws**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 7\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 7:**
**oip_ws**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 8\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 8:**
**cftc_ws**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 9\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 9:**
**target_s**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 10\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 10:**
**at_ls**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 11\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 11:**
**roe_ws**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*KROK 12\*\*\*\*\*\*\*\*\*\***

**Zmienna izolowana wyróniona w kroku 12:**
**eps_ws**

**\*\*\*\*\*\*\*\*\*\*\*\*\*\*Podsumowanie \*\*\*\*\*\*\*\*\*\*\***

**Metoda Hellwiga wyr◻ni◻a 12 zmiennych reprezentant◻w**

| Zmienne reprezentanty | Typ zmiennej reprezentanta | Zmienne sat. dla zm.centralnych |
|---|---|---|
| up_ratio_ls | zmienna centralna | imb_flag_s lp_ratio_ls stmpp_ls |
| current_ratio_ls | zmienna centralna | gpm_ls q_ratio_ls |
| roa_s | zmienna izolowana | |
| ocfts_ws | zmienna centralna | fcftni_ws |
| dividends_ls | zmienna centralna | cdp_ratio_s |
| dte_ratio_ws | zmienna izolowana | |
| oip_ws | zmienna izolowana | |
| cftc_ws | zmienna izolowana | |
| target_s | zmienna izolowana | |
| at_ls | zmienna izolowana | |
| roe_ws | zmienna izolowana | |
| eps_ws | zmienna izolowana | |

411 .
412 . corr at_ls cdp_ratio_s cftc_ws  current_ratio_ls  dividends_ls  dte_ratio_ws  eps_ws  fcftni_ws  gpm_ls  imb_flag_
(obs=199)

| | at_ls | cdp_ra~s | cftc_ws | curren~s | divide~s | dte_ra~s | eps_ws | fcftni~s | gpm_ls | imb_fl~s | lp_rat~s | oc |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| at_ls | 1.0000 | | | | | | | | | | | |
| cdp_ratio_s | 0.1004 | 1.0000 | | | | | | | | | | |
| cftc_ws | 0.0043 | -0.0544 | 1.0000 | | | | | | | | | |
| current_ra~s | 0.3507 | -0.0113 | 0.1897 | 1.0000 | | | | | | | | |
| dividends_ls | 0.0190 | -0.5005 | -0.0626 | -0.2721 | 1.0000 | | | | | | | |
| dte_ratio_ws | -0.1182 | 0.1152 | -0.0416 | 0.0140 | -0.1341 | 1.0000 | | | | | | |
| eps_ws | -0.0206 | -0.0534 | -0.1501 | -0.2038 | 0.2566 | -0.0811 | 1.0000 | | | | | |
| fcftni_ws | -0.0134 | -0.1933 | 0.0511 | -0.0630 | 0.0146 | 0.0034 | -0.0261 | 1.0000 | | | | |
| gpm_ls | 0.3806 | -0.0568 | 0.1356 | 0.7828 | -0.1670 | -0.0494 | -0.2455 | -0.0410 | 1.0000 | | | |
| imb_flag_s | -0.0793 | 0.1828 | -0.0315 | -0.0115 | -0.3187 | 0.1532 | -0.1479 | -0.0470 | -0.0191 | 1.0000 | | |
| lp_ratio_ls | 0.0893 | -0.2996 | -0.0019 | -0.0437 | 0.4559 | -0.0347 | 0.1163 | 0.0444 | 0.0227 | -0.5024 | 1.0000 | |
| ocfts_ws | -0.0333 | -0.3685 | 0.1198 | -0.0720 | 0.1032 | -0.0728 | 0.0658 | 0.8615 | -0.0238 | -0.0550 | 0.1230 | |
| oip_ws | 0.1023 | -0.1731 | -0.1028 | 0.0801 | 0.3079 | -0.1112 | 0.1775 | 0.0509 | 0.1866 | -0.1253 | 0.2731 | |
| q_ratio_ls | 0.3070 | -0.0064 | 0.1671 | 0.8666 | -0.2368 | -0.0010 | -0.1588 | -0.0556 | 0.6592 | -0.0255 | -0.0293 | |
| roa_s | 0.2140 | -0.1252 | -0.3498 | 0.0441 | 0.2357 | -0.0654 | 0.4966 | 0.0884 | 0.0170 | -0.2175 | 0.3397 | |
| roe_ws | -0.0207 | 0.0010 | -0.0354 | -0.0111 | -0.0904 | 0.4559 | -0.0095 | 0.0662 | -0.0431 | -0.0047 | 0.0803 | |
| stmpp_ls | -0.1292 | 0.3411 | 0.0143 | 0.0381 | -0.5065 | 0.0347 | -0.1304 | -0.0072 | -0.0209 | 0.4909 | -0.8854 | |
| target_s | -0.0179 | 0.0038 | 0.1001 | -0.0188 | 0.1020 | -0.0671 | 0.1078 | -0.0832 | -0.0871 | -0.1721 | -0.0372 | |
| up_ratio_ls | -0.1780 | 0.2310 | 0.0402 | 0.0483 | -0.3964 | 0.1269 | -0.2215 | -0.0379 | -0.0094 | 0.5743 | -0.7687 | |

413 .
414 . tabstat at_ls cdp_ratio_s cftc_ws  current_ratio_ls  dividends_ls  dte_ratio_ws  eps_ws  fcftni_ws  gpm_ls  imb_fl

| Stats | at_ls | cdp_ra~s | cftc_ws | curren~s | divide~s | dte_ra~s | eps_ws | fcftni~s | gpm_ls | imb_fl~s | lp_r |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CV | -5.48e+08 | 1.08e+08 | -1.77e+08 | -1.93e+08 | -9.82e+07 | -1.05e+09 | -8.05e+08 | -2.62e+08 | -1.17e+09 | -9.34e+08 | 7.37 |

415 .
416 . tabstat at_ls cdp_ratio_s cftc_ws  current_ratio_ls  dividends_ls  dte_ratio_ws  eps_ws  fcftni_ws  gpm_ls  imb_fl

| Stats | at_ls | cdp_ra~s | cftc_ws | curren~s | divide~s | dte_ra~s | eps_ws | fcftni~s | gpm_ls | imb_fl~s | lp_r |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Mean | -1.83e-09 | 9.27e-09 | -5.63e-09 | -5.17e-09 | -1.02e-08 | -9.55e-10 | -1.24e-09 | -3.81e-09 | -8.56e-10 | -1.07e-09 | 1.3 |
| SD | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| CV | -5.48e+08 | 1.08e+08 | -1.77e+08 | -1.93e+08 | -9.82e+07 | -1.05e+09 | -8.05e+08 | -2.62e+08 | -1.17e+09 | -9.34e+08 | 7.37 |

```
417 .
418 . save "C:\Projects\smwap_project\data\data_cleaned.dta"
    file C:\Projects\smwap_project\data\data_cleaned.dta already exists
    r(602);

419 .
```