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Housekeeping

```
clear all;
close all;
clc;
```

Set up the Import Options and import the data

```
opts = delimitedTextImportOptions("NumVariables", 14);

% Specify range and delimiter
opts.DataLines = [2, Inf];
opts.Delimiter = ",";

% Specify column names and types
opts.VariableNames =
 ["PERMNO", "date", "SHRCD", "EXHCD", "SICCD", "TICKER", "COMNAM", "SHRCLS", "NSDI
opts.VariableTypes =
 ["double", "datetime", "double", "double", "double", "categorical", "categorical"

% Specify file level properties
opts.ExtraColumnsRule = "ignore";
opts.EmptyLineRule = "read";

% Specify variable properties
opts = setvaropts(opts,
 ["TICKER", "COMNAM"], "EmptyFieldRule", "auto");
opts = setvaropts(opts, "date", "InputFormat", "");

% Import the data
MTDATA = readtable("/Users/jenschristensen/Documents/Master Thesis/
MTDATA.csv", opts);


% Clear temporary variables
clear opts

MTDATA = movevars(MTDATA, 'RET', 'Before', 'RETX');
MTDATA = movevars(MTDATA, 'SHROUT', 'Before', 'VOL');
```

```
Error using matlab.io.ImportOptions/readtable (line 655)
Unable to find or open '/Users/jenschristensen/Documents/Master
 Thesis/MTDATA.csv'. Check the path and filename or file permissions.

Error in MININGMOMENTUM (line 26)
MTDATA = readtable("/Users/jenschristensen/Documents/Master Thesis/
MTDATA.csv", opts);
```

Data cleaning

```
MTDATA = MTDATA(MTDATA.PRC >= 5, :); % Removes share price below 5
%
MCAP   = times(MTDATA.SHROUT,MTDATA.PRC);
MCAP   = array2table(MCAP);
MTDATA = [MTDATA MCAP];
clear MCAP
CAP = prctile(MTDATA.MCAP,[5]);
MTDATA = MTDATA(MTDATA.MCAP >= CAP, :); % Removes bottom 5 % MCAP
clear CAP

%
CAP = prctile(MTDATA.RET,[99]);
MTDATA = MTDATA(MTDATA.RET <= CAP, :); % Removes top 1% return
clear CAP
%
CAPP = prctile(MTDATA.RET,[1]);
MTDATA = MTDATA(MTDATA.RET >= CAPP, :); % Removes bottom 1% return
clear CAPP

% Removes companies not from stock exchanges
MTDATAO = MTDATA(MTDATA.EXHCD == 1, :);
MTDATAT = MTDATA(MTDATA.EXHCD == 2, :);
MTDATATT = MTDATA(MTDATA.EXHCD == 3, :);

MTDATA = [MTDATAO; MTDATAT; MTDATATT];

clear MTDATAO
clear MTDATAT
clear MTDATATT
```

CHANGE TO LOG RETURNS

```
MTDATA.RET = log(1+MTDATA.RET);
```

SPECIFY INDUSTRY

```
MTDATA          = MTDATA(MTDATA.SICCD<2400 & MTDATA.SICCD>2199,:);
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-1-1980', 'InputFormat', infmt);
```

```
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
```

```
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);
```

```
  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
```

```
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end

MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 82;

infmt = 'dd-MM-yyyy';
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0.000001;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);
```

```
one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];

MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end
```

```
MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end

MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];

MEANPORT = [MEANPORT;MEAN];

end


clear A
clear eight
clear endtime
clear FIRSTTT
clear five
clear four
clear HOLD66
```

```
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
clear RETTEN
clear RETTHREE
```

```
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y

MINRETONE = MEANPORT;
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-2-1980', 'InputFormat', infmt);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP
```

```
TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};
```

```
% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4
```

```
clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
```

```
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);
```

```
  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end

MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 82;

infmt = 'dd-MM-yyyy';
```

```
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
```

```
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3
```

```
clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
```

```
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end
```

```
MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
```

```
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end

MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];

MEANPORT = [MEANPORT;MEAN];

end

clear A
clear eight
clear endtime
clear FIRSTTT
clear five
clear four
clear HOLD66
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
```

```
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
clear RETTEN
clear RETTHREE
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y
```

```
MINRETTWO = MEANPORT;
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-3-1980', 'InputFormat', infmt);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
```

```
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
```

```
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
```

```
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};
```

```
% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9
```

```
clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};



MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);
```

```
  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end
```

```
MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 82;

infmt = 'dd-MM-yyyy';
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
```

```
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
```

```
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO           = retime(MRETTWO,'monthly','mean');
MRETTWO           = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
```

```
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
```

```
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};
```

```
% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10
```

```
clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
```

```
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];
```

```
MEANPORT = [MEANPORT;MEAN];

end

clear A
clear eight
clear endtime
clear FIRSTTT
clear five
clear four
clear HOLD66
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
```

```
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
clear RETTEN
clear RETTHREE
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y

MINRETTHREE = MEANPORT;
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-4-1980', 'InputFormat', infmt);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
```

```
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);
```

```
RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);
```

```
RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
```

```
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
```

```
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
```

```
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end

MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};
```

```
TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 82;

infmt = 'dd-MM-yyyy';
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};
```

```
clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);
```

```
RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
```

```
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
```

```
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
```

```
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);
```

```
  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];

MEANPORT = [MEANPORT;MEAN];

end

clear A
clear eight
clear endtime
clear FIRSTTT
clear five
clear four
clear HOLD66
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
```

```
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
clear RETTEN
clear RETTHREE
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
```

```
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y

MINRETFOUR = MEANPORT;
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-5-1980', 'InputFormat', infmt);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
```

```
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);
```

```
RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
```

```
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 82;

infmt = 'dd-MM-yyyy';
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix
```

```
clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
```

```
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end
```

```
MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];

MEANPORT = [MEANPORT;MEAN];

end

clear A
clear eight
clear endtime
clear FIRSTTT
clear five
clear four
clear HOLD66
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
```

```
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
clear RETTEN
clear RETTHREE
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y

MINRETFIVE = MEANPORT;
```

HOLDING PERIOD DEFINITION

```
infmt = 'dd-MM-yyyy';
starttime1 = datetime('1-6-1980', 'InputFormat', infmt);
```

```
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);

one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
```

```
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
```

```
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
```

```
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);
```

```
  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
```

```
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEANPORT = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX
 MRETSEVEN MRETEIGHT MRETNINE MRETTEN];
MEANPORT.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEANPORT.P1 - MEANPORT.P10;
TRADINGRET = array2table(TRADINGRET);

MEANPORT = [MEANPORT TRADINGRET];
```

LOOP

```
for K = 1 : 81;

infmt = 'dd-MM-yyyy';
starttime1 = datenum(starttime1);
starttime1 = addtodate(starttime1, 6, 'month');
starttime1 = datestr(starttime1);
endtime1 = datenum(starttime1);
endtime1 = addtodate(endtime1, 6, 'month');
endtime1 = datestr(endtime1);
FORM66 = MTDATA(isbetween(MTDATA.date, starttime1, endtime1), :); %
 extracts formation period into own matrix

clear infmt
clear endtime1

TT  = accumarray(FORM66.PERMNO,FORM66.RET,[],@sum,8000);
TT  = TT(TT~=8000);
TP = unique(FORM66.PERMNO);
TT = [TP TT];
TT = TT(sum(isnan(TT),2)==0,:);
TT = array2table(TT);
TT = sortrows(TT,'TT2','descend'); % Gives average return

if mod(numel(TT.TT2),10)
  TT.TT2(end+1:ceil(numel(TT.TT2)/10)*10) = 0;
end

clear FORM66
clear TP

TT = sortrows(TT,'TT2','descend');
C = size(TT,1)/10;
B = mat2cell(TT,[C C C C C C C C C C],[2]);
```

```
one     = B{1, 1};
two     = B{2, 1};
three   = B{3, 1};
four    = B{4, 1};
five    = B{5, 1};
six     = B{6, 1};
seven   = B{7, 1};
eight   = B{8, 1};
nine    = B{9, 1};
ten     = B{10, 1};

clear TT
clear C
clear B

infmt = 'dd-MM-yyyy';
starttime2 = datenum(starttime1);
starttime2 = addtodate(starttime2, 7, 'month');
starttime2 = datestr(starttime2);
endtime2 = datenum(starttime1);
endtime2 = addtodate(endtime2, 13, 'month');
endtime2 = datestr(endtime2);
HOLD66 = MTDATA(isbetween(MTDATA.date, starttime2, endtime2), :);
% FORMATION PERIOD P1

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = one.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETONEF = A(Y(X),:);

RETONE = [RETONEA;RETONEB;RETONEC;RETONED;RETONEE;RETONEF];
MRETONE = removevars(RETONE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETONE = table2timetable(MRETONE);
MRETONE            = retime(MRETONE,'monthly','mean');
MRETONE            = timetable2table(MRETONE);
MRETONE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P2

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = two.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTWOF = A(Y(X),:);

RETTWO = [RETTWOA;RETTWOB;RETTWOC;RETTWOD;RETTWOE;RETTWOF];
MRETTWO = removevars(RETTWO,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTWO = table2timetable(MRETTWO);
MRETTWO            = retime(MRETTWO,'monthly','mean');
MRETTWO            = timetable2table(MRETTWO);
MRETTWO.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P3

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = three.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETTHREEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETHREEF = A(Y(X),:);

RETTHREE =
 [RETTHREEA;RETTHREEB;RETTHREEC;RETTHREED;RETTHREEE;RETHREEF];
MRETTHREE = removevars(RETTHREE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTHREE = table2timetable(MRETTHREE);
MRETTHREE            = retime(MRETTHREE,'monthly','mean');
MRETTHREE            = timetable2table(MRETTHREE);
MRETTHREE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P4

clear infmt
clear endtime2
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = four.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETFOURE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFOURF = A(Y(X),:);

RETFOUR = [RETFOURA;RETFOURB;RETFOURC;RETFOURD;RETFOURE;RETFOURF];
MRETFOUR = removevars(RETFOUR,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFOUR = table2timetable(MRETFOUR);
MRETFOUR            = retime(MRETFOUR,'monthly','mean');
MRETFOUR            = timetable2table(MRETFOUR);
MRETFOUR.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P5

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = five.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
```

```
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVED = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETFIVEF = A(Y(X),:);

RETFIVE = [RETFIVEA;RETFIVEB;RETFIVEC;RETFIVED;RETFIVEE;RETFIVEF];
MRETFIVE = removevars(RETFIVE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETFIVE = table2timetable(MRETFIVE);
MRETFIVE            = retime(MRETFIVE,'monthly','mean');
MRETFIVE            = timetable2table(MRETFIVE);
MRETFIVE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P6

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = six.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXE = A(Y(X),:);
```

```
starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXF = A(Y(X),:);

RETFSIX = [RETSIXA;RETSIXB;RETSIXC;RETSIXD;RETSIXE;RETSIXF];
MRETSIX = removevars(RETFSIX,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSIX = table2timetable(MRETSIX);
MRETSIX            = retime(MRETSIX,'monthly','mean');
MRETSIX            = timetable2table(MRETSIX);
MRETSIX.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P7

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = seven.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETSIXA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);
```

```
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFSEVEN = [RETSIXA;RETB;RETC;RETD;RETE;RETF];
MRETSEVEN = removevars(RETFSEVEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETSEVEN = table2timetable(MRETSEVEN);
MRETSEVEN            = retime(MRETSEVEN,'monthly','mean');
MRETSEVEN            = timetable2table(MRETSEVEN);
MRETSEVEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P8

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = eight.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
```

```
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETEIGHT = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETEIGHT = removevars(RETEIGHT,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETEIGHT = table2timetable(MRETEIGHT);
MRETEIGHT            = retime(MRETEIGHT,'monthly','mean');
MRETEIGHT            = timetable2table(MRETEIGHT);
MRETEIGHT.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P9

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = nine.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
```

```
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETFNINE = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETNINE = removevars(RETFNINE,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETNINE = table2timetable(MRETNINE);
MRETNINE            = retime(MRETNINE,'monthly','mean');
MRETNINE            = timetable2table(MRETNINE);
MRETNINE.Properties.VariableNames = {'MONTH' 'AVGRETURN'};

% FORMATION PERIOD P10

clear infmt
clear endtime2

starttime = datenum(starttime1);
starttime = addtodate(starttime, 7, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 8, 'month');
endtime = datestr(endtime);
```

```
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

FIRSTTT = ten.TT1;
[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETA = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 8, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 9, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETB = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 9, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 10, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETC = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 10, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 11, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETD = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 11, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
endtime = addtodate(endtime, 12, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETE = A(Y(X),:);

starttime = datenum(starttime1);
starttime = addtodate(starttime, 12, 'month');
starttime = datestr(starttime);
endtime = datenum(starttime1);
```

```
endtime = addtodate(endtime, 13, 'month');
endtime = datestr(endtime);
A = HOLD66(isbetween(HOLD66.date, starttime, endtime), :);

[X,Y] = ismember(FIRSTTT,A.PERMNO);
RETF = A(Y(X),:);

RETTEN = [RETA;RETB;RETC;RETD;RETE;RETF];
MRETTEN = removevars(RETTEN,
{'PERMNO','SICCD','TICKER','COMNAM','NSDINX','PRC','SHROUT','VOL','RETX','MCAP','S
MRETTEN = table2timetable(MRETTEN);
MRETTEN            = retime(MRETTEN,'monthly','mean');
MRETTEN            = timetable2table(MRETTEN);
MRETTEN.Properties.VariableNames = {'MONTH' 'AVGRETURN'};


MRETTWO = MRETTWO.AVGRETURN;
MRETTWO = array2table(MRETTWO);

  if height(MRETTWO) ~= height(MRETONE)
    MRETTWO = array2table(zeros(height(MRETONE),1))
    MRETTWO.Properties.VariableNames = {'MRETTWO'}
  end

MRETTHREE = MRETTHREE.AVGRETURN;
MRETTHREE = array2table(MRETTHREE);

  if height(MRETTHREE) ~= height(MRETONE)
    MRETTHREE = array2table(zeros(height(MRETONE),1))
    MRETTHREE.Properties.VariableNames = {'MRETTHREE'}
  end

MRETFOUR = MRETFOUR.AVGRETURN;
MRETFOUR = array2table(MRETFOUR);

  if height(MRETFOUR) ~= height(MRETONE)
    MRETFOUR = array2table(zeros(height(MRETONE),1))
    MRETFOUR.Properties.VariableNames = {'MRETFOUR'}
  end

MRETFIVE = MRETFIVE.AVGRETURN;
MRETFIVE = array2table(MRETFIVE);

  if height(MRETFIVE) ~= height(MRETONE)
    MRETFIVE = array2table(zeros(height(MRETONE),1))
    MRETFIVE.Properties.VariableNames = {'MRETFIVE'}
  end

MRETSIX = MRETSIX.AVGRETURN;
MRETSIX = array2table(MRETSIX);

  if height(MRETSIX) ~= height(MRETONE)
    MRETSIX = array2table(zeros(height(MRETONE),1))
    MRETSIX.Properties.VariableNames = {'MRETSIX'}
```

```
  end

MRETSEVEN = MRETSEVEN.AVGRETURN;
MRETSEVEN = array2table(MRETSEVEN);

  if height(MRETSEVEN) ~= height(MRETONE)
    MRETSEVEN = array2table(zeros(height(MRETONE),1))
    MRETSEVEN.Properties.VariableNames = {'MRETSEVEN'}
  end

MRETEIGHT = MRETEIGHT.AVGRETURN;
MRETEIGHT = array2table(MRETEIGHT);

  if height(MRETEIGHT) ~= height(MRETONE)
    MRETEIGHT = array2table(zeros(height(MRETONE),1))
    MRETEIGHT.Properties.VariableNames = {'MRETEIGHT'}
  end

MRETNINE = MRETNINE.AVGRETURN;
MRETNINE = array2table(MRETNINE);

  if height(MRETNINE) ~= height(MRETONE)
    MRETNINE = array2table(zeros(height(MRETONE),1))
    MRETNINE.Properties.VariableNames = {'MRETNINE'}
  end

MRETTEN = MRETTEN.AVGRETURN;
MRETTEN = array2table(MRETTEN);

  if height(MRETTEN) ~= height(MRETONE)
    MRETTEN = array2table(zeros(height(MRETONE),1))
    MRETTEN.Properties.VariableNames = {'MRETTEN'}
  end


MEAN = [MRETONE MRETTWO MRETTHREE MRETFOUR MRETFIVE MRETSIX MRETSEVEN
 MRETEIGHT MRETNINE MRETTEN];
MEAN.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10'};

TRADINGRET = MEAN.P1 - MEAN.P10;
TRADINGRET = array2table(TRADINGRET);

MEAN = [MEAN TRADINGRET];

MEANPORT = [MEANPORT;MEAN];

end

clear A
clear eight
clear endtime
clear FIRSTTT
clear five
```

```
clear four
clear HOLD66
clear K
clear MEAN
clear MRETEIGHT
clear MRETFIVE
clear MRETFOUR
clear MRETNINE
clear MRETONE
clear MRETSEVEN
clear MRETSIX
clear MRETTEN
clear MRETTHREE
clear MRETTWO
clear nine
clear one
clear RETA
clear RETB
clear RETC
clear RETD
clear RETE
clear RETEIGHT
clear RETF
clear RETFIVE
clear RETFIVEA
clear RETFIVEB
clear RETFIVEC
clear RETFIVED
clear RETFIVEE
clear RETFIVEF
clear RETFNINE
clear RETFOUR
clear RETFOURA
clear RETFOURB
clear RETFOURC
clear RETFOURD
clear RETFOURE
clear RETFOURF
clear RETFSEVEN
clear RETFSIX
clear RETHREEF
clear RETONE
clear RETONEA
clear RETONEB
clear RETONEC
clear RETONED
clear RETONEE
clear RETONEF
clear RETSIXA
clear RETSIXB
clear RETSIXC
clear RETSIXD
clear RETSIXE
clear RETSIXF
```

```
clear RETTEN
clear RETTHREE
clear RETTHREEA
clear RETTHREEB
clear RETTHREEC
clear RETTHREED
clear RETTHREEE
clear RETTWO
clear RETTWOA
clear RETTWOB
clear RETTWOC
clear RETTWOD
clear RETTWOE
clear RETTWOF
clear seven
clear six
clear starttime
clear starttime1
clear starttime2
clear ten
clear three
clear TRADINGRET
clear two
clear X
clear Y

MINRETSIX = MEANPORT;
```

Average

```
MONTHLYLOGMEANAPPAREL =
 [MINRETONE;MINRETTWO;MINRETTHREE;MINRETFOUR;MINRETFIVE;MINRETSIX];
MONTHLYLOGMEANAPPAREL = table2timetable(MONTHLYLOGMEANAPPAREL);
MONTHLYLOGMEANAPPAREL =
 retime(MONTHLYLOGMEANAPPAREL,'monthly','mean');

ANNUALLOGMEANAPPAREL  = retime(MONTHLYLOGMEANAPPAREL,'yearly','sum');
```

back to regular mean

```
MONTH = MONTHLYLOGMEANAPPAREL.MONTH;

MONTHLYMEANAPPAREL = table(MONTH,(exp(MONTHLYLOGMEANAPPAREL.P1)-1),
(exp(MONTHLYLOGMEANAPPAREL.P2)-1),(exp(MONTHLYLOGMEANAPPAREL.P3)-1),
(exp(MONTHLYLOGMEANAPPAREL.P4)-1),(exp(MONTHLYLOGMEANAPPAREL.P5)-1),
(exp(MONTHLYLOGMEANAPPAREL.P6)-1),(exp(MONTHLYLOGMEANAPPAREL.P7)-1),
(exp(MONTHLYLOGMEANAPPAREL.P8)-1),(exp(MONTHLYLOGMEANAPPAREL.P9)-1),
(exp(MONTHLYLOGMEANAPPAREL.P10)-1),((exp(MONTHLYLOGMEANAPPAREL.P1)-1)-
(exp(MONTHLYLOGMEANAPPAREL.P10)-1)));
MONTHLYMEANAPPAREL.Properties.VariableNames =
 {'MONTH' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10' 'TRADINGRET'};
MONTHLYMEANAPPAREL = table2timetable(MONTHLYMEANAPPAREL);
```

```
YEAR = ANNUALLOGMEANAPPAREL.MONTH;

ANNUALMEANAPPAREL = table(YEAR,(exp(ANNUALLOGMEANAPPAREL.P1)-1),
(exp(ANNUALLOGMEANAPPAREL.P2)-1),(exp(ANNUALLOGMEANAPPAREL.P3)-1),
(exp(ANNUALLOGMEANAPPAREL.P4)-1),(exp(ANNUALLOGMEANAPPAREL.P5)-1),
(exp(ANNUALLOGMEANAPPAREL.P6)-1),(exp(ANNUALLOGMEANAPPAREL.P7)-1),
(exp(ANNUALLOGMEANAPPAREL.P8)-1),(exp(ANNUALLOGMEANAPPAREL.P9)-1),
(exp(ANNUALLOGMEANAPPAREL.P10)-1),((exp(ANNUALLOGMEANAPPAREL.P1)-1)-
(exp(ANNUALLOGMEANAPPAREL.P10)-1)));
ANNUALMEANAPPAREL.Properties.VariableNames =
 {'YEAR' 'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10' 'TRADINGRET'};
ANNUALMEANAPPAREL = table2timetable(ANNUALMEANAPPAREL);
```

CLEAN UP

```
clear MEANPORT
clear MINRETONE
clear MINRETTWO
clear MINRETTHREE
clear MINRETFOUR
clear MINRETFIVE
clear MINRETSIX
clear MONTH
clear YEAR
```

Data import from previous codes

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
GENERALMOMENTUM + CODES/MONTHLYMEAN.mat')
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
```

General Momentum - Desccriptive Statistics

```
MON = timetable2table(MONTHLYMEAN);
RF = BENCH.RF/100;
MON.P1 = MON.P1-RF;
MON.P2 = MON.P2-RF;
MON.P3 = MON.P3-RF;
MON.P4 = MON.P4-RF;
MON.P5 = MON.P5-RF;
MON.P6 = MON.P6-RF;
MON.P7 = MON.P7-RF;
MON.P8 = MON.P8-RF;
MON.P9 = MON.P9-RF;
MON.P10 = MON.P10-RF;
MON.TRADINGRET = MON.P1-MON.P10;

MON(:,1) = [];
MKT = BENCH.MktRF/100;
MKT = table(MKT);
```

```
MON = [MON MKT];
MONN = table2array(MON);
MONN(isnan(MONN))=0;
STATS = mean(MONN);             % Mean
SIGNI = ttest(MONN);            % Statistical Significance
STATS = [STATS;std(MONN)];      % Standard Deviation

P1 = fitlm(BENCH.MktRF/100,MON.P1);
P2 = fitlm(BENCH.MktRF/100,MON.P2);
P3 = fitlm(BENCH.MktRF/100,MON.P3);
P4 = fitlm(BENCH.MktRF/100,MON.P4);
P5 = fitlm(BENCH.MktRF/100,MON.P5);
P6 = fitlm(BENCH.MktRF/100,MON.P6);
P7 = fitlm(BENCH.MktRF/100,MON.P7);
P8 = fitlm(BENCH.MktRF/100,MON.P8);
P9 = fitlm(BENCH.MktRF/100,MON.P9);
P10 = fitlm(BENCH.MktRF/100,MON.P10);
PT = fitlm(BENCH.MktRF/100,MON.TRADINGRET);
PM = fitlm(BENCH.MktRF/100,BENCH.MktRF/100);

P1A = P1.Coefficients.Estimate;
P1A(2,:) = [];
P2A = P2.Coefficients.Estimate;
P2A(2,:) = [];
P3A = P3.Coefficients.Estimate;
P3A(2,:) = [];
P4A = P4.Coefficients.Estimate;
P4A(2,:) = [];
P5A = P5.Coefficients.Estimate;
P5A(2,:) = [];
P6A = P6.Coefficients.Estimate;
P6A(2,:) = [];
P7A = P7.Coefficients.Estimate;
P7A(2,:) = [];
P8A = P8.Coefficients.Estimate;
P8A(2,:) = [];
P9A = P9.Coefficients.Estimate;
P9A(2,:) = [];
P10A = P10.Coefficients.Estimate;
P10A(2,:) = [];
PTA = PT.Coefficients.Estimate;
PTA(2,:) = [];
PMA = PM.Coefficients.Estimate;
PMA(2,:) = [];

ALPHA = [P1A P2A P3A P4A P5A P6A P7A P8A P9A P10A PTA PMA];  % Jensens
 Alpha
STATS = [STATS;ALPHA];

P1AT = P1.Coefficients.tStat;
P1AT(2,:) = [];
P2AT = P2.Coefficients.tStat;
P2AT(2,:) = [];
P3AT = P3.Coefficients.tStat;
```

```
P3AT(2,:) = [];
P4AT = P4.Coefficients.tStat;
P4AT(2,:) = [];
P5AT = P5.Coefficients.tStat;
P5AT(2,:) = [];
P6AT = P6.Coefficients.tStat;
P6AT(2,:) = [];
P7AT = P7.Coefficients.tStat;
P7AT(2,:) = [];
P8AT = P8.Coefficients.tStat;
P8AT(2,:) = [];
P9AT = P9.Coefficients.tStat;
P9AT(2,:) = [];
P10AT = P10.Coefficients.tStat;
P10AT(2,:) = [];
PTAT = PT.Coefficients.tStat;
PTAT(2,:) = [];
PMAT = PM.Coefficients.tStat;
PMAT(2,:) = [];

ALPHATSTAT = [P1AT P2AT P3AT P4AT P5AT P6AT P7AT P8AT P9AT P10AT PTAT
 PMAT]; % Statistical Significance - Jensens Alpha
STATS = [STATS;ALPHATSTAT];

P1B = P1.Coefficients.Estimate;
P1B(1,:) = [];
P2B = P2.Coefficients.Estimate;
P2B(1,:) = [];
P3B = P3.Coefficients.Estimate;
P3B(1,:) = [];
P4B = P4.Coefficients.Estimate;
P4B(1,:) = [];
P5B = P5.Coefficients.Estimate;
P5B(1,:) = [];
P6B = P6.Coefficients.Estimate;
P6B(1,:) = [];
P7B = P7.Coefficients.Estimate;
P7B(1,:) = [];
P8B = P8.Coefficients.Estimate;
P8B(1,:) = [];
P9B = P9.Coefficients.Estimate;
P9B(1,:) = [];
P10B = P10.Coefficients.Estimate;
P10B(1,:) = [];
PTB = PT.Coefficients.Estimate;
PTB(1,:) = [];
PMB = PM.Coefficients.Estimate;
PMB(1,:) = [];

BETA = [P1B P2B P3B P4B P5B P6B P7B P8B P9B P10B PTB PMB]; % CAPM Beta
STATS = [STATS;BETA];

P1BT = P1.Coefficients.tStat;
P1BT(1,:) = [];
```

```
P2BT = P2.Coefficients.tStat;
P2BT(1,:) = [];
P3BT = P3.Coefficients.tStat;
P3BT(1,:) = [];
P4BT = P4.Coefficients.tStat;
P4BT(1,:) = [];
P5BT = P5.Coefficients.tStat;
P5BT(1,:) = [];
P6BT = P6.Coefficients.tStat;
P6BT(1,:) = [];
P7BT = P7.Coefficients.tStat;
P7BT(1,:) = [];
P8BT = P8.Coefficients.tStat;
P8BT(1,:) = [];
P9BT = P9.Coefficients.tStat;
P9BT(1,:) = [];
P10BT = P10.Coefficients.tStat;
P10BT(1,:) = [];
PTBT = PT.Coefficients.tStat;
PTBT(1,:) = [];
PMBT = PM.Coefficients.tStat;
PMBT(1,:) = [];

BETATSTAT = [P1BT P2BT P3BT P4BT P5BT P6BT P7BT P8BT P9BT P10BT PTBT
 PMBT]; % STatistical Significance - CAPM Beta
STATS = [STATS;BETATSTAT];

MEAN = array2table((mean(MONN)));
STD = array2table((std(MONN)));
SHARPE = [MEAN.Var1/STD.Var1 MEAN.Var2/STD.Var2 MEAN.Var3/STD.Var3
 MEAN.Var4/STD.Var4 MEAN.Var5/STD.Var5 MEAN.Var6/STD.Var6 MEAN.Var7/
STD.Var7 MEAN.Var8/STD.Var8 MEAN.Var9/STD.Var9 MEAN.Var10/STD.Var10
 MEAN.Var11/STD.Var11 MEAN.Var12/STD.Var12];
STATS = [STATS;SHARPE]; % Sharpe ratio

MEAN = array2table((mean(MONN)));
BETA = array2table(BETA);
TREYNOR = [MEAN.Var1/BETA.BETA1 MEAN.Var2/BETA.BETA2 MEAN.Var3/
BETA.BETA3 MEAN.Var4/BETA.BETA4 MEAN.Var5/BETA.BETA5 MEAN.Var6/
BETA.BETA6 MEAN.Var7/BETA.BETA7 MEAN.Var8/BETA.BETA8 MEAN.Var9/
BETA.BETA9 MEAN.Var10/BETA.BETA10 MEAN.Var11/BETA.BETA11 MEAN.Var12/
BETA.BETA12];
STATS = [STATS;TREYNOR]; % Treynor ratio

MMMM = ret2price(MONN);
[MaxDD, MaxDDIndex] = maxdrawdown(MMMM); % Maximum Drawdown
STATS = [STATS;MaxDD];

DDM = [18 18 23 23 23 23 23 23 23 117 16 18]; % Maximum Drawdown in
 time
STATS = [STATS;DDM];

SKEW = skewness(MONN); % Skewnes
STATS = [STATS;SKEW];
```

```
KURT = kurtosis(MONN); % Kurtosis
STATS = [STATS;KURT];

[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P1,[],0.0001);
JBSTAT1 = jbstat;
JBP1 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P2,[],0.0001);
JBSTAT2 = jbstat;
JBP2 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P3,[],0.0001);
JBSTAT3 = jbstat;
JBP3 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P4,[],0.0001);
JBSTAT4 = jbstat;
JBP4 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P5,[],0.0001);
JBSTAT5 = jbstat;
JBP5 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P6,[],0.0001);
JBSTAT6 = jbstat;
JBP6 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P7,[],0.0001);
JBSTAT7 = jbstat;
JBP7 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P8,[],0.0001);
JBSTAT8 = jbstat;
JBP8 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P9,[],0.0001);
JBSTAT9 = jbstat;
JBP9 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.P10,[],0.0001);
JBSTAT10 = jbstat;
JBP10 = p;
[h,p,jbstat,critval] = jbtest(MONTHLYMEAN.TRADINGRET,[],0.0001);
JBSTATT = jbstat;
JBPT = p;
[h,p,jbstat,critval] = jbtest(MKT.MKT,[],0.0001);
JBSTATM = jbstat;
JBPM = p;

JBSTAT = [JBSTAT1 JBSTAT2 JBSTAT3 JBSTAT4 JBSTAT5 JBSTAT6 JBSTAT7
 JBSTAT8 JBSTAT9 JBSTAT10 JBSTATT JBSTATM]; % Jarque Bera
JBP = [JBP1 JBP2 JBP3 JBP4 JBP5 JBP6 JBP7 JBP8 JBP9 JBP10 JBPT
 JBPM]; % JB P-value

STATS = [STATS;JBSTAT;JBP];

STATS = array2table(STATS);
STATS.Properties.VariableNames =
 {'P1' 'P2' 'P3' 'P4' 'P5' 'P6' 'P7' 'P8' 'P9' 'P10' 'TRADINGRET' 'MARKET'};

STATS.Properties.RowNames =
 {'RETURN';'STDD';'ALPHA';'ATSTAT';'BETA';'BTSTAT';'SHARPE';'TREYNOR';'MDD';'MDDMO
```

General Momentum - Maximum Drawdown (data + plots)

```
MON = 1

for K = 2:497
    MONN = MON(K-1,:)*(1+MONTHLYMEAN.TRADINGRET(K,:));
    if MONN > 1
        MONN = 1
    end
    MON = [MON;MONN];
end

MON = MON-1

BMKT = BENCH.MktRF/100
MKT = 1

for K = 2:497
    MKTT = MKT(K-1,:)*(1+BMKT(K,:));
    if MKTT > 1
        MKTT = 1
    end
    MKT = [MKT;MKTT];
end

MKT = MKT-1

Drawdown = table(MONTHLYMEAN.MONTH,MON,MKT);
Drawdown.Properties.VariableNames = {'TIME' 'ZEROCOST' 'MARKET'};

DD = [Drawdown.ZEROCOST Drawdown.MARKET];

plot(Drawdown.TIME,Drawdown.ZEROCOST,'-
k',Drawdown.TIME,Drawdown.MARKET,'--k') % Drawdowns
hold on
legend('Zerocost','Market')
title('PANEL X')
ylabel('DD in %')
xlabel('Time')
hold off

MIN = 1

for K = 2:497
    MONN = MIN(K-1,:)*(1+MONTHLYMEAN.TRADINGRET(K,:));
    if MONN < 1
        MONN = 1
    end
    MIN = [MIN;MONN];
end
```

```
MIN = MIN-1

BMKT = BENCH.MktRF/100
MIT = 1

for K = 2:497
    MKTT = MIT(K-1,:)*(1+BMKT(K,:));
    if MKTT < 1
        MKTT = 1
    end
    MIT = [MIT;MKTT];
end

MIT = MIT-1

plot(Drawdown.TIME,MIT,'-k',Drawdown.TIME,MIN,'--k')
hold on
legend('Zerocost','Market')
title('PANEL X')
ylabel('Return in %')
xlabel('Time')
hold off
```

General Momentum - Descriptive statistics - Market States

```
BASIC = table(MONTHLYMEAN.MONTH,MONTHLYMEAN.TRADINGRET,
(BENCH.MktRF/100));
BASIC = table2timetable(BASIC);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-12-1980', 'InputFormat', infmt);
endtime = datetime('2-6-1982', 'InputFormat', infmt);
T1 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-7-1982', 'InputFormat', infmt);
endtime = datetime('2-3-1983', 'InputFormat', infmt);
T2 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-4-1983', 'InputFormat', infmt);
endtime = datetime('2-8-1987', 'InputFormat', infmt);
T3 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-09-1987', 'InputFormat', infmt);
endtime = datetime('2-11-1987', 'InputFormat', infmt);
T4 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-12-1987', 'InputFormat', infmt);
```

```
endtime = datetime('2-8-1989', 'InputFormat', infmt);
T5 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-09-1989', 'InputFormat', infmt);
endtime = datetime('2-10-1990', 'InputFormat', infmt);
T6 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-11-1990', 'InputFormat', infmt);
endtime = datetime('2-5-1991', 'InputFormat', infmt);
T7 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-06-1991', 'InputFormat', infmt);
endtime = datetime('2-03-2000', 'InputFormat', infmt);
T8 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-4-2000', 'InputFormat', infmt);
endtime = datetime('2-9-2002', 'InputFormat', infmt);
T9 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-10-2002', 'InputFormat', infmt);
endtime = datetime('2-5-2007', 'InputFormat', infmt);
T10 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-6-2007', 'InputFormat', infmt);
endtime = datetime('2-2-2009', 'InputFormat', infmt);
T11 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-3-2009', 'InputFormat', infmt);
endtime = datetime('2-12-2012', 'InputFormat', infmt);
T12 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-1-2013', 'InputFormat', infmt);
endtime = datetime('2-12-2019', 'InputFormat', infmt);
T13 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-1-2020', 'InputFormat', infmt);
endtime = datetime('2-3-2020', 'InputFormat', infmt);
T14 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
starttime = datetime('1-4-2020', 'InputFormat', infmt);
endtime = datetime('2-6-2020', 'InputFormat', infmt);
T15 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

infmt = 'dd-MM-yyyy';
```

```
starttime = datetime('1-7-2020', 'InputFormat', infmt);
endtime = datetime('2-12-2021', 'InputFormat', infmt);
T16 = BASIC(isbetween(BASIC.Var1, starttime, endtime), :);

P1 = timetable2table(T1)
P1(:,1) = [];
P2 = timetable2table(T2)
P2(:,1) = [];
P3 = timetable2table(T3)
P3(:,1) = [];
P4 = timetable2table(T4)
P4(:,1) = [];
P5 = timetable2table(T5)
P5(:,1) = [];
P6 = timetable2table(T6)
P6(:,1) = [];
P7 = timetable2table(T7)
P7(:,1) = [];
P8 = timetable2table(T8)
P8(:,1) = [];
P9 = timetable2table(T9)
P9(:,1) = [];
P10 = timetable2table(T10)
P10(:,1) = [];
P11 = timetable2table(T11)
P11(:,1) = [];
P12 = timetable2table(T12)
P12(:,1) = [];
P13 = timetable2table(T13)
P13(:,1) = [];
P14 = timetable2table(T14)
P14(:,1) = [];
P15 = timetable2table(T15)
P15(:,1) = [];
P16 = timetable2table(T16)
P16(:,1) = [];


STATS = [mean(P1.Var2) mean(P1.Var3) mean(P2.Var2) mean(P2.Var3)
 mean(P3.Var2) mean(P3.Var3) mean(P4.Var2) mean(P4.Var3)
 mean(P5.Var2) mean(P5.Var3) mean(P6.Var2) mean(P6.Var3) mean(P7.Var2)
 mean(P7.Var3) mean(P8.Var2) mean(P8.Var3) mean(P9.Var2) mean(P9.Var3)
 mean(P10.Var2) mean(P10.Var3) mean(P11.Var2) mean(P11.Var3)
 mean(P12.Var2) mean(P12.Var3) mean(P13.Var2) mean(P13.Var3)
 mean(P14.Var2) mean(P14.Var3) mean(P15.Var2) mean(P15.Var3)
 mean(P16.Var2) mean(P16.Var3);std(P1.Var2) std(P1.Var3) std(P2.Var2)
 std(P2.Var3) std(P3.Var2) std(P3.Var3) std(P4.Var2) std(P4.Var3)
 std(P5.Var2) std(P5.Var3) std(P6.Var2) std(P6.Var3) std(P7.Var2)
 std(P7.Var3) std(P8.Var2) std(P8.Var3) std(P9.Var2) std(P9.Var3)
 std(P10.Var2) std(P10.Var3) std(P11.Var2) std(P11.Var3) std(P12.Var2)
 std(P12.Var3) std(P13.Var2) std(P13.Var3) std(P14.Var2) std(P14.Var3)
 std(P15.Var2) std(P15.Var3) std(P16.Var2) std(P16.Var3)];

R1 = fitlm(T1.Var3,T1.Var2);
```

```
R2 = fitlm(T1.Var3,T1.Var3);
R3 = fitlm(T2.Var3,T2.Var2);
R4 = fitlm(T2.Var3,T2.Var3);
R5 = fitlm(T3.Var3,T3.Var2);
R6 = fitlm(T3.Var3,T3.Var3);
R7 = fitlm(T4.Var3,T4.Var2);
R8 = fitlm(T4.Var3,T4.Var3);
R9 = fitlm(T5.Var3,T5.Var2);
R10 = fitlm(T5.Var3,T5.Var3);
R11 = fitlm(T6.Var3,T6.Var2);
R12 = fitlm(T6.Var3,T6.Var3);
R13 = fitlm(T7.Var3,T7.Var2);
R14 = fitlm(T7.Var3,T7.Var3);
R15 = fitlm(T8.Var3,T8.Var2);
R16 = fitlm(T8.Var3,T8.Var3);
R17 = fitlm(T9.Var3,T9.Var2);
R18 = fitlm(T9.Var3,T9.Var3);
R19 = fitlm(T10.Var3,T10.Var2);
R20 = fitlm(T10.Var3,T10.Var3);
R21 = fitlm(T11.Var3,T11.Var2);
R22 = fitlm(T11.Var3,T11.Var3);
R23 = fitlm(T12.Var3,T12.Var2);
R24 = fitlm(T12.Var3,T12.Var3);
R25 = fitlm(T13.Var3,T13.Var2);
R26 = fitlm(T13.Var3,T13.Var3);
R27 = fitlm(T14.Var3,T14.Var2);
R28 = fitlm(T14.Var3,T14.Var3);
R29 = fitlm(T15.Var3,T15.Var2);
R30 = fitlm(T15.Var3,T15.Var3);
R31 = fitlm(T16.Var3,T16.Var2);
R32 = fitlm(T16.Var3,T16.Var3);

R1A = R1.Coefficients.Estimate;
R1A(2,:) = [];
R2A = R2.Coefficients.Estimate;
R2A(2,:) = [];
R3A = R3.Coefficients.Estimate;
R3A(2,:) = [];
R4A = R4.Coefficients.Estimate;
R4A(2,:) = [];
R5A = R5.Coefficients.Estimate;
R5A(2,:) = [];
R6A = R6.Coefficients.Estimate;
R6A(2,:) = [];
R7A = R7.Coefficients.Estimate;
R7A(2,:) = [];
R8A = R8.Coefficients.Estimate;
R8A(2,:) = [];
R9A = R9.Coefficients.Estimate;
R9A(2,:) = [];
R10A = R10.Coefficients.Estimate;
R10A(2,:) = [];
R11A = R11.Coefficients.Estimate;
R11A(2,:) = [];
```

```
R12A = R12.Coefficients.Estimate;
R12A(2,:) = [];
R13A = R13.Coefficients.Estimate;
R13A(2,:) = [];
R14A = R14.Coefficients.Estimate;
R14A(2,:) = [];
R15A = R15.Coefficients.Estimate;
R15A(2,:) = [];
R16A = R16.Coefficients.Estimate;
R16A(2,:) = [];
R17A = R17.Coefficients.Estimate;
R17A(2,:) = [];
R18A = R18.Coefficients.Estimate;
R18A(2,:) = [];
R19A = R19.Coefficients.Estimate;
R19A(2,:) = [];
R20A = R20.Coefficients.Estimate;
R20A(2,:) = [];
R21A = R21.Coefficients.Estimate;
R21A(2,:) = [];
R22A = R22.Coefficients.Estimate;
R22A(2,:) = [];
R23A = R23.Coefficients.Estimate;
R23A(2,:) = [];
R24A = R24.Coefficients.Estimate;
R24A(2,:) = [];
R25A = R25.Coefficients.Estimate;
R25A(2,:) = [];
R26A = R26.Coefficients.Estimate;
R26A(2,:) = [];
R27A = R27.Coefficients.Estimate;
R27A(2,:) = [];
R28A = R28.Coefficients.Estimate;
R28A(2,:) = [];
R29A = R29.Coefficients.Estimate;
R29A(2,:) = [];
R30A = R30.Coefficients.Estimate;
R30A(2,:) = [];
R31A = R31.Coefficients.Estimate;
R31A(2,:) = [];
R32A = R32.Coefficients.Estimate;
R32A(2,:) = [];

ALPHA = [R1A R2A R3A R4A R5A R6A R7A R8A R9A R10A R11A R12A R13A R14A
 R15A R16A R17A R18A R19A R20A R21A R22A R23A R24A R25A R26A R27A R28A
 R29A R30A R31A R32A];
STATS = [STATS;ALPHA];

R1A = R1.Coefficients.tStat;
R1A(2,:) = [];
R2A = R2.Coefficients.tStat;
R2A(2,:) = [];
R3A = R3.Coefficients.tStat;
R3A(2,:) = [];
```

```
R4A = R4.Coefficients.tStat;
R4A(2,:) = [];
R5A = R5.Coefficients.tStat;
R5A(2,:) = [];
R6A = R6.Coefficients.tStat;
R6A(2,:) = [];
R7A = R7.Coefficients.tStat;
R7A(2,:) = [];
R8A = R8.Coefficients.tStat;
R8A(2,:) = [];
R9A = R9.Coefficients.tStat;
R9A(2,:) = [];
R10A = R10.Coefficients.tStat;
R10A(2,:) = [];
R11A = R11.Coefficients.tStat;
R11A(2,:) = [];
R12A = R12.Coefficients.tStat;
R12A(2,:) = [];
R13A = R13.Coefficients.tStat;
R13A(2,:) = [];
R14A = R14.Coefficients.tStat;
R14A(2,:) = [];
R15A = R15.Coefficients.tStat;
R15A(2,:) = [];
R16A = R16.Coefficients.tStat;
R16A(2,:) = [];
R17A = R17.Coefficients.tStat;
R17A(2,:) = [];
R18A = R18.Coefficients.tStat;
R18A(2,:) = [];
R19A = R19.Coefficients.tStat;
R19A(2,:) = [];
R20A = R20.Coefficients.tStat;
R20A(2,:) = [];
R21A = R21.Coefficients.tStat;
R21A(2,:) = [];
R22A = R22.Coefficients.tStat;
R22A(2,:) = [];
R23A = R23.Coefficients.tStat;
R23A(2,:) = [];
R24A = R24.Coefficients.tStat;
R24A(2,:) = [];
R25A = R25.Coefficients.tStat;
R25A(2,:) = [];
R26A = R26.Coefficients.tStat;
R26A(2,:) = [];
R27A = R27.Coefficients.tStat;
R27A(2,:) = [];
R28A = R28.Coefficients.tStat;
R28A(2,:) = [];
R29A = R29.Coefficients.tStat;
R29A(2,:) = [];
R30A = R30.Coefficients.tStat;
R30A(2,:) = [];
```

```
R31A = R31.Coefficients.tStat;
R31A(2,:) = [];
R32A = R32.Coefficients.tStat;
R32A(2,:) = [];

ALPHAT = [R1A R2A R3A R4A R5A R6A R7A R8A R9A R10A R11A R12A R13A R14A
 R15A R16A R17A R18A R19A R20A R21A R22A R23A R24A R25A R26A R27A R28A
 R29A R30A R31A R32A];
STATS = [STATS;ALPHAT];

R1A = R1.Coefficients.Estimate;
R1A(1,:) = [];
R2A = R2.Coefficients.Estimate;
R2A(1,:) = [];
R3A = R3.Coefficients.Estimate;
R3A(1,:) = [];
R4A = R4.Coefficients.Estimate;
R4A(1,:) = [];
R5A = R5.Coefficients.Estimate;
R5A(1,:) = [];
R6A = R6.Coefficients.Estimate;
R6A(1,:) = [];
R7A = R7.Coefficients.Estimate;
R7A(1,:) = [];
R8A = R8.Coefficients.Estimate;
R8A(1,:) = [];
R9A = R9.Coefficients.Estimate;
R9A(1,:) = [];
R10A = R10.Coefficients.Estimate;
R10A(1,:) = [];
R11A = R11.Coefficients.Estimate;
R11A(1,:) = [];
R12A = R12.Coefficients.Estimate;
R12A(1,:) = [];
R13A = R13.Coefficients.Estimate;
R13A(1,:) = [];
R14A = R14.Coefficients.Estimate;
R14A(1,:) = [];
R15A = R15.Coefficients.Estimate;
R15A(1,:) = [];
R16A = R16.Coefficients.Estimate;
R16A(1,:) = [];
R17A = R17.Coefficients.Estimate;
R17A(1,:) = [];
R18A = R18.Coefficients.Estimate;
R18A(1,:) = [];
R19A = R19.Coefficients.Estimate;
R19A(1,:) = [];
R20A = R20.Coefficients.Estimate;
R20A(1,:) = [];
R21A = R21.Coefficients.Estimate;
R21A(1,:) = [];
R22A = R22.Coefficients.Estimate;
R22A(1,:) = [];
```

```
R23A = R23.Coefficients.Estimate;
R23A(1,:) = [];
R24A = R24.Coefficients.Estimate;
R24A(1,:) = [];
R25A = R25.Coefficients.Estimate;
R25A(1,:) = [];
R26A = R26.Coefficients.Estimate;
R26A(1,:) = [];
R27A = R27.Coefficients.Estimate;
R27A(1,:) = [];
R28A = R28.Coefficients.Estimate;
R28A(1,:) = [];
R29A = R29.Coefficients.Estimate;
R29A(1,:) = [];
R30A = R30.Coefficients.Estimate;
R30A(1,:) = [];
R31A = R31.Coefficients.Estimate;
R31A(1,:) = [];
R32A = R32.Coefficients.Estimate;
R32A(1,:) = [];

BETA = [R1A R2A R3A R4A R5A R6A R7A R8A R9A R10A R11A R12A R13A R14A
 R15A R16A R17A R18A R19A R20A R21A R22A R23A R24A R25A R26A R27A R28A
 R29A R30A R31A R32A];
STATS = [STATS;BETA];

R1A = R1.Coefficients.tStat;
R1A(1,:) = [];
R2A = R2.Coefficients.tStat;
R2A(1,:) = [];
R3A = R3.Coefficients.tStat;
R3A(1,:) = [];
R4A = R4.Coefficients.tStat;
R4A(1,:) = [];
R5A = R5.Coefficients.tStat;
R5A(1,:) = [];
R6A = R6.Coefficients.tStat;
R6A(1,:) = [];
R7A = R7.Coefficients.tStat;
R7A(1,:) = [];
R8A = R8.Coefficients.tStat;
R8A(1,:) = [];
R9A = R9.Coefficients.tStat;
R9A(1,:) = [];
R10A = R10.Coefficients.tStat;
R10A(1,:) = [];
R11A = R11.Coefficients.tStat;
R11A(1,:) = [];
R12A = R12.Coefficients.tStat;
R12A(1,:) = [];
R13A = R13.Coefficients.tStat;
R13A(1,:) = [];
R14A = R14.Coefficients.tStat;
R14A(1,:) = [];
```

```
R15A = R15.Coefficients.tStat;
R15A(1,:) = [];
R16A = R16.Coefficients.tStat;
R16A(1,:) = [];
R17A = R17.Coefficients.tStat;
R17A(1,:) = [];
R18A = R18.Coefficients.tStat;
R18A(1,:) = [];
R19A = R19.Coefficients.tStat;
R19A(1,:) = [];
R20A = R20.Coefficients.tStat;
R20A(1,:) = [];
R21A = R21.Coefficients.tStat;
R21A(1,:) = [];
R22A = R22.Coefficients.tStat;
R22A(1,:) = [];
R23A = R23.Coefficients.tStat;
R23A(1,:) = [];
R24A = R24.Coefficients.tStat;
R24A(1,:) = [];
R25A = R25.Coefficients.tStat;
R25A(1,:) = [];
R26A = R26.Coefficients.tStat;
R26A(1,:) = [];
R27A = R27.Coefficients.tStat;
R27A(1,:) = [];
R28A = R28.Coefficients.tStat;
R28A(1,:) = [];
R29A = R29.Coefficients.tStat;
R29A(1,:) = [];
R30A = R30.Coefficients.tStat;
R30A(1,:) = [];
R31A = R31.Coefficients.tStat;
R31A(1,:) = [];
R32A = R32.Coefficients.tStat;
R32A(1,:) = [];

BETAT = [R1A R2A R3A R4A R5A R6A R7A R8A R9A R10A R11A R12A R13A R14A
 R15A R16A R17A R18A R19A R20A R21A R22A R23A R24A R25A R26A R27A R28A
 R29A R30A R31A R32A];
STATS = [STATS;BETAT];

SHARPE = [(mean(P1.Var2)/std(P1.Var2)) (mean(P1.Var3)/std(P1.Var3))
 (mean(P2.Var2)/std(P2.Var2)) (mean(P2.Var3)/std(P2.Var3))
 (mean(P3.Var2)/std(P3.Var2)) (mean(P3.Var3)/std(P3.Var3))
 (mean(P4.Var2)/std(P4.Var2)) (mean(P4.Var3)/std(P4.Var3))
 (mean(P5.Var2)/std(P5.Var2)) (mean(P5.Var3)/std(P5.Var3))
 (mean(P6.Var2)/std(P6.Var2)) (mean(P6.Var3)/std(P6.Var3))
 (mean(P7.Var2)/std(P7.Var2)) (mean(P7.Var3)/std(P7.Var3))
 (mean(P8.Var2)/std(P8.Var2)) (mean(P8.Var3)/std(P8.Var3))
 (mean(P9.Var2)/std(P9.Var2)) (mean(P9.Var3)/std(P9.Var3))
 (mean(P10.Var2)/std(P10.Var2)) (mean(P10.Var3)/std(P10.Var3))
 (mean(P11.Var2)/std(P11.Var2)) (mean(P11.Var3)/std(P11.Var3))
 (mean(P12.Var2)/std(P12.Var2)) (mean(P12.Var3)/std(P12.Var3))
```

```
 (mean(P13.Var2)/std(P13.Var2)) (mean(P13.Var3)/std(P13.Var3))
 (mean(P14.Var2)/std(P14.Var2)) (mean(P14.Var3)/std(P14.Var3))
 (mean(P15.Var2)/std(P15.Var2)) (mean(P15.Var3)/std(P15.Var3))
 (mean(P16.Var2)/std(P16.Var2)) (mean(P16.Var3)/std(P16.Var3))];
STATS = [STATS;SHARPE];

BETA = array2table(BETA);
TREYNOR = [(mean(P1.Var2)/BETA.BETA1) (mean(P1.Var3)/BETA.BETA2)
 (mean(P2.Var2)/BETA.BETA3) (mean(P2.Var3)/BETA.BETA4) (mean(P3.Var2)/
BETA.BETA5) (mean(P3.Var3)/BETA.BETA6) (mean(P4.Var2)/BETA.BETA7)
 (mean(P4.Var3)/BETA.BETA8) (mean(P5.Var2)/BETA.BETA9) (mean(P5.Var3)/
BETA.BETA10) (mean(P6.Var2)/BETA.BETA11) (mean(P6.Var3)/BETA.BETA12)
 (mean(P7.Var2)/BETA.BETA13) (mean(P7.Var3)/BETA.BETA14)
 (mean(P8.Var2)/BETA.BETA15) (mean(P8.Var3)/BETA.BETA16)
 (mean(P9.Var2)/BETA.BETA17) (mean(P9.Var3)/BETA.BETA18)
 (mean(P10.Var2)/BETA.BETA19) (mean(P10.Var3)/BETA.BETA20)
 (mean(P11.Var2)/BETA.BETA21) (mean(P11.Var3)/BETA.BETA22)
 (mean(P12.Var2)/BETA.BETA23) (mean(P12.Var3)/BETA.BETA24)
 (mean(P13.Var2)/BETA.BETA25) (mean(P13.Var3)/BETA.BETA26)
 (mean(P14.Var2)/BETA.BETA27) (mean(P14.Var3)/BETA.BETA28)
 (mean(P15.Var2)/BETA.BETA29) (mean(P15.Var3)/BETA.BETA30)
 (mean(P16.Var2)/BETA.BETA31) (mean(P16.Var3)/BETA.BETA32)];
STATS = [STATS;TREYNOR];

SKEW = [skewness(P1.Var2) skewness(P1.Var3) skewness(P2.Var2)
 skewness(P2.Var3) skewness(P3.Var2) skewness(P3.Var3)
 skewness(P4.Var2) skewness(P4.Var3) skewness(P5.Var2)
 skewness(P5.Var3) skewness(P6.Var2) skewness(P6.Var3)
 skewness(P7.Var2) skewness(P7.Var3) skewness(P8.Var2)
 skewness(P8.Var3) skewness(P9.Var2) skewness(P9.Var3)
 skewness(P10.Var2) skewness(P10.Var3) skewness(P11.Var2)
 skewness(P11.Var3) skewness(P12.Var2) skewness(P12.Var3)
 skewness(P13.Var2) skewness(P13.Var3) skewness(P14.Var2)
 skewness(P14.Var3) skewness(P15.Var2) skewness(P15.Var3)
 skewness(P16.Var2) skewness(P16.Var3)];
STATS = [STATS;SKEW];

KURT = [kurtosis(P1.Var2) kurtosis(P1.Var3) kurtosis(P2.Var2)
 kurtosis(P2.Var3) kurtosis(P3.Var2) kurtosis(P3.Var3)
 kurtosis(P4.Var2) kurtosis(P4.Var3) kurtosis(P5.Var2)
 kurtosis(P5.Var3) kurtosis(P6.Var2) kurtosis(P6.Var3)
 kurtosis(P7.Var2) kurtosis(P7.Var3) kurtosis(P8.Var2)
 kurtosis(P8.Var3) kurtosis(P9.Var2) kurtosis(P9.Var3)
 kurtosis(P10.Var2) kurtosis(P10.Var3) kurtosis(P11.Var2)
 kurtosis(P11.Var3) kurtosis(P12.Var2) kurtosis(P12.Var3)
 kurtosis(P13.Var2) kurtosis(P13.Var3) kurtosis(P14.Var2)
 kurtosis(P14.Var3) kurtosis(P15.Var2) kurtosis(P15.Var3)
 kurtosis(P16.Var2) kurtosis(P16.Var3)];
STATS = [STATS;KURT];

STATS = array2table(STATS);
STATS.Properties.VariableNames =
 {'ZC1' 'MKT1' 'ZC2' 'MKT2' 'ZC3' 'MKT3' 'ZC4' 'MKT4' 'ZC5' 'MKT5' 'ZC6' 'MKT6' 'Z
```

```
STATS.Properties.RowNames =
 {'RETURN';'STDD';'ALPHA';'ATSTAT';'BETA';'BTSTAT';'SHARPE';'TREYNOR';'SKEW';'KURT

Down = [T1;T4;T6;T9;T11];
DOWN = [mean(Down.Var2);std(Down.Var2)]

Recovery = [T2;T5;T7;T10;T12];
RECOVERY = [mean(Recovery.Var2);std(Recovery.Var2)]

Steady = [T3;T8;T13];
STEADY = [mean(Steady.Var2);std(Steady.Var2)]
```

WHOLE TIME PERIOD

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/WINNERS.mat')
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/LOSERS.mat')

W = timetable2table(WINNERS);
W(:,1) = [];
W(:,19) = [];
W = table2array(W);
L = timetable2table(LOSERS);
L(:,1) = [];
L(:,19) = [];
L = table2array(L);
reg = W-L;
reg = array2table(reg);
reg =
 array2table([reg.reg1;reg.reg2;reg.reg3;reg.reg4;reg.reg5;reg.reg6;reg.reg7;reg.r
```

market

```
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
MKT = BENCH.MktRF/100;
MKT = array2table(MKT);
mkt =
 array2table([MKT.MKT;MKT.MKT;MKT.MKT;MKT.MKT;MKT.MKT;MKT.MKT;MKT.MKT;MKT.MKT;MKT.
```

One dimension

```
One = table(mkt.Var1,reg.Var1);
Regone = fitlm(One)
```

MCAP

```
Mcap = array2table(repelem(Multipreg.Dep,497));
Two = table(mkt.Var1,Mcap.Var1,reg.Var1);
Regtwo = fitlm(Two)
```

Debt ratio

```
Drat = array2table(repelem(Multipreg.Dep1,497));
Three = table(mkt.Var1,Mcap.Var1,Drat.Var1,reg.Var1);
Regthree = fitlm(Three)
```

Volatility

```
Vol = array2table(repelem(Multipreg.Dep2,497));
Four = table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,reg.Var1);
Regfour = fitlm(Four)
```

Beta

```
Beta = array2table(repelem(Multipreg.Dep3,497));
Five =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,reg.Var1);
Regfive = fitlm(Five)
```

dummy variable for time before covid

```
Month = [zeros(473,1);ones(24,1)];
Month =
 [Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Mo
Month = array2table(Month);

Six =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,Month.Month,reg.Var1);
Regsix = fitlm(Six)
```

dummy variable for time after covid

```
Month = [ones(473,1);zeros(24,1)];
Month =
 [Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Month;Mo
Month = array2table(Month);

Six =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,Month.Month,reg.Var1);
Regsix = fitlm(Six)
```

Under steady state

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/WINNERS.mat')
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/LOSERS.mat')

W = timetable2table(WINNERS);
W(:,1) = [];
```

```
W(:,19) = [];
W = table2array(W);
L = timetable2table(LOSERS);
L(:,1) = [];
L(:,19) = [];
L = table2array(L);
reg = W-L;
reg =
 array2table([reg(45:97,:);reg(131:248,:);reg(390:473,:);reg(480:497,:)]);
reg =
 array2table([reg.Var1;reg.Var2;reg.Var3;reg.Var4;reg.Var5;reg.Var6;reg.Var7;reg.V
```

market

```
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
MKT = BENCH.MktRF/100;
MKT =
 array2table([MKT(45:97,:);MKT(131:248,:);MKT(390:473,:);MKT(480:497,:)]);
mkt =
 array2table([MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.V
```

One dimension

```
One = table(mkt.Var1,reg.Var1);
Regone = fitlm(One)
```

MCAP

```
Mcap = array2table(repelem(Multipreg.Dep,273));
Two = table(mkt.Var1,Mcap.Var1,reg.Var1);
Regtwo = fitlm(Two)
```

Debt ratio

```
Drat = array2table(repelem(Multipreg.Dep1,273));
Three = table(mkt.Var1,Mcap.Var1,Drat.Var1,reg.Var1);
Regthree = fitlm(Three)
```

Volatility

```
Vol = array2table(repelem(Multipreg.Dep2,273));
Four = table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,reg.Var1);
Regfour = fitlm(Four)
```

Beta

```
Beta = array2table(repelem(Multipreg.Dep3,273));
Five =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,reg.Var1);
Regfive = fitlm(Five)
```

Under down-state

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/WINNERS.mat')
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/LOSERS.mat')

W = timetable2table(WINNERS);
W(:,1) = [];
W(:,19) = [];
W = table2array(W);
L = timetable2table(LOSERS);
L(:,1) = [];
L(:,19) = [];
L = table2array(L);
reg = W-L;
reg =
 array2table([reg(5:23,:);reg(86:88,:);reg(110:123,:);reg(237:266,:);reg(323:343,:
reg =
 array2table([reg.Var1;reg.Var2;reg.Var3;reg.Var4;reg.Var5;reg.Var6;reg.Var7;reg.V
```

market

```
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
MKT = BENCH.MktRF/100;
MKT =
 array2table([MKT(5:23,:);MKT(86:88,:);MKT(110:123,:);MKT(237:266,:);MKT(323:343,:
mkt =
 array2table([MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.V
```

One dimension

```
One = table(mkt.Var1,reg.Var1);
Regone = fitlm(One)
```

MCAP

```
Mcap = array2table(repelem(Multipreg.Dep,90));
Two = table(mkt.Var1,Mcap.Var1,reg.Var1);
Regtwo = fitlm(Two)
```

Debt ratio

```
Drat = array2table(repelem(Multipreg.Dep1,90));
Three = table(mkt.Var1,Mcap.Var1,Drat.Var1,reg.Var1);
Regthree = fitlm(Three)
```

Volatility

```
Vol = array2table(repelem(Multipreg.Dep2,90));
```

```
Four = table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,reg.Var1);
Regfour = fitlm(Four)
```

Beta

```
Beta = array2table(repelem(Multipreg.Dep3,90));
Five =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,reg.Var1);
Regfive = fitlm(Five)
```

Under recovery-state

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/WINNERS.mat')
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/LOSERS.mat')

W = timetable2table(WINNERS);
W(:,1) = [];
W(:,19) = [];
W = table2array(W);
L = timetable2table(LOSERS);
L(:,1) = [];
L(:,19) = [];
L = table2array(L);
reg = W-L;
reg =
 array2table([reg(24:32,:);reg(89:109,:);reg(124:130,:);reg(267:322,:);reg(344:389
reg =
 array2table([reg.Var1;reg.Var2;reg.Var3;reg.Var4;reg.Var5;reg.Var6;reg.Var7;reg.V
```

market

```
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
MKT = BENCH.MktRF/100;
MKT =
 array2table([MKT(24:32,:);MKT(89:109,:);MKT(124:130,:);MKT(267:322,:);MKT(344:389
mkt =
 array2table([MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.V
```

One dimension

```
One = table(mkt.Var1,reg.Var1);
Regone = fitlm(One)
```

MCAP

```
Mcap = array2table(repelem(Multipreg.Dep,142));
Two = table(mkt.Var1,Mcap.Var1,reg.Var1);
Regtwo = fitlm(Two)
```

Debt ratio

```
Drat = array2table(repelem(Multipreg.Dep1,142));
Three = table(mkt.Var1,Mcap.Var1,Drat.Var1,reg.Var1);
Regthree = fitlm(Three)
```

Volatility

```
Vol = array2table(repelem(Multipreg.Dep2,142));
Four = table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,reg.Var1);
Regfour = fitlm(Four)
```

Beta

```
Beta = array2table(repelem(Multipreg.Dep3,142));
Five =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,reg.Var1);
Regfive = fitlm(Five)
```

Covid whole period

```
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/WINNERS.mat')
load('/Users/jenschristensen/Documents/Master Thesis/NEW DATA/
ultimate/LOSERS.mat')

W = timetable2table(WINNERS);
W(:,1) = [];
W(:,19) = [];
W = table2array(W);
L = timetable2table(LOSERS);
L(:,1) = [];
L(:,19) = [];
L = table2array(L);
reg = W-L;
reg = array2table([reg(477:497,:)]);
reg =
 array2table([reg.Var1;reg.Var2;reg.Var3;reg.Var4;reg.Var5;reg.Var6;reg.Var7;reg.V
```

Market

```
load('/Users/jenschristensen/Documents/Master Thesis/Data/BENCH.mat')
MKT = BENCH.MktRF/100;
MKT = array2table([MKT(477:479,:)]);
mkt =
 array2table([MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.Var1;MKT.V
```

One dimension

```
One = table(mkt.Var1,reg.Var1);
```

```
Regone = fitlm(One)
```

MCAP

```
Mcap = array2table(repelem(Multipreg.Dep,3));
Two = table(mkt.Var1,Mcap.Var1,reg.Var1);
Regtwo = fitlm(Two)
```

Debt ratio

```
Drat = array2table(repelem(Multipreg.Dep1,3));
Three = table(mkt.Var1,Mcap.Var1,Drat.Var1,reg.Var1);
Regthree = fitlm(Three)
```

Volatility

```
Vol = array2table(repelem(Multipreg.Dep2,3));
Four = table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,reg.Var1);
Regfour = fitlm(Four)
```

Beta

```
Beta = array2table(repelem(Multipreg.Dep3,3));
Five =
 table(mkt.Var1,Mcap.Var1,Drat.Var1,Vol.Var1,Beta.Var1,reg.Var1);
Regfive = fitlm(Five)
```

Defiding market states

```
avgc = W-L;
avgc = avgc(474:497,:);
avgDown = avgc(1:3,:);
avgrec = avgc(4:6,:);
avgstea = avgc(7:24,:);
avgc(isnan(avgc))=0;
avgDown(isnan(avgDown))=0;

Mc = mean(avgc);
Md = mean(avgDown);
Ms = mean(avgstea);
Mr = mean(avgrec);

average = [transpose(Mc) transpose(Ms) transpose(Md) transpose(Mr)];
```

plot

```
pl = W-L;
pl(isnan(pl))=0;
pl = ret2price(pl);
pl = array2table(pl);
```

```
pl(1,:)=[];
G = WINNERS.MONTH;
pl =
 timetable(G,pl.pl1,pl.pl2,pl.pl3,pl.pl4,pl.pl5,pl.pl6,pl.pl7,pl.pl8,pl.pl9,pl.pl1
pl.Properties.VariableNames =
 {'MINING' 'FOOD' 'APPAREL' 'PAPER' 'CHEMICAL' 'PETROLEUM' 'CONSTRUCTION' 'PRIMMET
MM = pl.MINING;
DD = pl.FOOD;
plot(G,MM,'-k',G,DD,'--k')
```

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