libname a "E:\Downloads";

**proc** **sql**;

create table check as select unique year(date) as year, count(distinct PERMNO) as PERMNO, count(RET) as n, mean(RET) as RET

from a.Crsp\_1965\_1989

group by year(date);

**quit**;

Title "DeBondt and Thaler (1985) Table 1 of Does the stock market overract?";

Title "Jegadeesh and Titman (1993) Table 1: Returns of Relative Strength Portfolios";

Title2 "Portfolios based on &J month lagged return";

libname a "E:\Downloads";

options obs=max;

%let J=6; /\*change to 6,9,12,24,36,48 manually!\*/

%let group=60;

**proc** **expand** data=a.crsp\_1965\_1989 (keep=permno date ret) out=umd1 method=none;

by permno;

id date;

convert ret = cum\_return / transformin=(+**1**) transformout=(MOVPROD &J -**1** trimleft **5**);/\*change value each time based on formation period: 5,8,11,23,35,47\*/

**quit**;

**proc** **sort** data=umd1; by date; where cum\_return^=**.**; **run**;

**proc** **rank** data=umd1 out=umd group=&group;

by date;

var cum\_return;

ranks momr;

**run**;

**proc** **sql**;

create table umd2

as select distinct a.permno, a.cum\_return as cum\_return\_pre, a.momr, a.date as form\_date format YYMMDDN8., b.date, b.ret, intck("month", a.date, b.date) as K

from umd as a,

a.crsp\_1965\_1989 as b

where a.permno=b.permno

and **0**<intck("month", a.date, b.date)<=**36** and month(form\_date)=**1**;

**quit**; \*24,424,395;

**proc** **means** data = umd2 nway noprint mean n;

class form\_date momr K;

var ret cum\_return\_pre;

output out = port&j mean=ret cum\_return\_pre n=Num\_permno;

**run**;

**proc** **expand** data=port&j out=umd4 method=none;

by form\_date momr;

id K;

convert ret=cum\_return / transformout=( + **1** cuprod - **1**);

**quit**;

**data** loser;

set umd4;

where momr=**0**;

loser=cum\_return;

keep form\_date K loser Num\_permno;

**run**;

**data** winner;

set umd4;

where momr=&group-**1**;

winner=cum\_return;

keep form\_date K winner Num\_permno;

**run**;

**proc** **sql**;

create table Winer\_loser&j as select distinct \*, a.winner-b.loser as winner\_loser

from winner as a,

loser as b

where a.form\_date=b.form\_date and a.K=b.K;

**quit**;

**proc** **sort** data=Winer\_loser&j; by K; **run**;

**proc** **reg** data=Winer\_loser&j;

where K in(**1**, **3**, **9**, **12**, **36**);

by K;

model Winner\_Loser=;

model winner=;

model loser=;

ods output parameterestimates=Win\_loseTest&j;

**quit**;

**data** Win\_loseTest&j; format J best3. ;

set Win\_loseTest&j;

J=&j;

drop StdErr Model Variable DF Probt;

**run**;

**proc** **sort** data=Win\_loseTest&j; by j Dependent K; **run**;

**proc** **transpose** data=Win\_loseTest&j out=final1(drop=\_LABEL\_);

by j Dependent;

id K;

var Estimate;

**run**;

**proc** **transpose** data=Win\_loseTest&j out=final2(drop=\_LABEL\_);

by j Dependent;

id K;

var tValue;

**run**;

**data** final&j;

set final1 final2;

**run**;

**proc** **sort** data=final&j; by j Dependent \_NAME\_; **run**;

**proc** **sort** data=port6 nodupkey; by form\_date momr; **run**;

**proc** **means** data=port6 nway mean n median;

class momr;

var cum\_return\_pre;

output out=ret\_pre mean=cum\_return\_pre;

**run**;

\*\*\*Change to a different J value and re-run the above codes, then use data step to combine these different datasets;

**data** final;

set final6 final9 final12 final24 final36 final48;

**run**;

**proc** **print** data=final(obs=**100**); **run**;

**proc** **means** data=Winer\_loser&j nway mean n median;

class k;

var winner\_loser;

output out=ret\_post mean=winner\_loser;

**run**;

**PROC** **SGPLOT** DATA = ret\_post;

SERIES X = k Y = winner\_loser / LEGENDLABEL = 'winner\_loser';

TITLE 'Cumulative returns over time post formation';

**RUN**;