```
/* Generated Code (IMPORT) */
/* Source File: Fall 2023 Lab #3 Closing Prices.xlsx */
/* Source Path: /home/u63542550/sasuser.v94 */
/* Code generated on: 11/21/23, 12:10 PM */

%web_drop_table(WORK.IMPORT);


FILENAME REFFILE '/home/u63542550/sasuser.v94/Fall 2023 Lab #3 Closing Prices.xlsx';

PROC IMPORT DATAFILE=REFFILE
    DBMS=XLSX
    OUT=WORK.stock;
    GETNAMES=YES;
RUN;

PROC CONTENTS DATA=WORK.stock; RUN;


%web_open_table(WORK.IMPORT);

proc print data = stock (OBS=10); run;
/* ACN ADBE AKAM AMD APH */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = ACN/legendlabel="ACN";
    series x = date y = ADBE/legendlabel="ADBE";
    series x = date y = AKAM/legendlabel="AKAM";
    series x = date y = AMD/legendlabel="AMD";
    series x = date y = APH/legendlabel="APH";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and First 5 Potential Independent Variables";
RUN;
/* ADI ANSS AAPL AMAT ANET*/
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = ADI/legendlabel="ADI";
    series x = date y = ANSS/legendlabel="ANSS";
    series x = date y = AAPL/legendlabel="AAPL";
    series x = date y = AMAT/legendlabel="AMAT";
    series x = date y = ANET/legendlabel="ANET";
    title "Scatter Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/* ADSK AVGO CDNS CDW CSCO */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = ADSK/legendlabel="ADSK";
    series x = date y = AVGO/legendlabel="AVGO";
    series x = date y = CDNS/legendlabel="CDNS";
    series x = date y = CDNS/legendlabel="CDW";
    series x = date y = CSCO/legendlabel="CSCO";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/*CTSH GLW ENPH EPAM FFIV*/
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = CTSH/legendlabel="CTSH";
    series x = date y = GLW/legendlabel="GLW";
    series x = date y = ENPH/legendlabel="ENPH";
    series x = date y = EPAM/legendlabel="EPAM";
    series x = date y = FFIV/legendlabel="FFIV";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/*FICO FSLR FTNT IT GEN */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = FICO/legendlabel="FICO";
```

```
    series x = date y = FSLR/legendlabel="FSLR";
    series x = date y = FTNT/legendlabel="FTNT";
    series x = date y = IT/legendlabel="IT";
    series x = date y = GEN/legendlabel="GEN";
    yaxis label="Price of Share";
    title "Scatter Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/* HPE HPQ IBM INTC INTU */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = HPE/legendlabel="HPE";
    series x = date y = HPQ/legendlabel="HPQ";
    series x = date y = IBM/legendlabel="IBM";
    series x = date y = INTC/legendlabel="INTC";
    series x = date y = INTU/legendlabel="INTU";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/* JNPR KEYS KLAC LRCX MCHP  */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = JNPR/legendlabel="JNPR";
    series x = date y = KEYS/legendlabel="KEYS";
    series x = date y = KLAC/legendlabel="KLAC";
    series x = date y = LRCX/legendlabel="LRCX";
    series x = date y = MCHP/legendlabel="MCHP";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/*  MU MSFT MPWR MSI NVDA   */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = MU/legendlabel="MU";
    series x = date y = MSFT/legendlabel="MSFT";
    series x = date y = MPWR/legendlabel="MPWR";
    series x = date y = MSI/legendlabel="MSI";
    series x = date y = NVDA/legendlabel="NVDA";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
/*  NXPI ON ORCL PANW PTC */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = NXPI/legendlabel="NXPI";
    series x = date y = ON/legendlabel="ON";
    series x = date y = ORCL/legendlabel="ORCL";
    series x = date y = PANW/legendlabel="PANW";
    series x = date y = PTC/legendlabel="PTC";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
    /*QRVO QCOM ROP CRM STX */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = QRVO/legendlabel="QRVO";
    series x = date y = QCOM/legendlabel="QCOM";
    series x = date y = ROP/legendlabel="ROP";
    series x = date y = CRM/legendlabel="CRM";
    series x = date y = STX/legendlabel="STX";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
    /*NOW SWKS SEDG SNPS TEL */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = NOW/legendlabel="NOW";
    series x = date y = SWKS/legendlabel="SWKS";
    series x = date y = SEDG/legendlabel="SEDG";
    series x = date y = SNPS/legendlabel="SNPS";
    series x = date y = TEL/legendlabel="TEL";
```

```
    yaxis label="Price of Share";
    title " Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
    /*TDY TER TXN TRMB TYL */
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = TDY/legendlabel="TDY";
    series x = date y = TER/legendlabel="TER";
    series x = date y = TXN/legendlabel="TXN";
    series x = date y = TRMB/legendlabel="TRMB";
    series x = date y = TYL/legendlabel="TYL";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;
    /*VRSN WDC ZBRA*/
proc sgplot data=stock;
    series x = date y = NTAP/legendlabel="NTAP";
    series x = date y = VRSN/legendlabel="VRSN";
    series x = date y = WDC/legendlabel="WDC";
    series x = date y = ZBRA/legendlabel="ZBRA";
    yaxis label="Price of Share";
    title "Plot of Prices Over Time for Dependent variable and Next 5 Potential Independent Variables";
RUN;

/*proc corr to get a strating point */
proc corr data=stock;
    var NTAP;
    with ACN ADBE AKAM AMD APH
    ADI ANSS AAPL AMAT ANET
    ADSK AVGO CDNS CDW CSCO
    CTSH GLW ENPH EPAM FFIV
    FICO FSLR FTNT IT GEN
    HPE HPQ IBM INTC INTU
    JNPR KEYS KLAC LRCX MCHP
    MU MSFT MPWR MSI NVDA
    NXPI ON ORCL PANW PTC
    QRVO QCOM ROP CRM STX
    NOW SWKS SEDG SNPS TEL
    TDY TER TXN TRMB TYL
    VRSN WDC ZBRA;
    run;
/*proc corr with all potential varibles to get graphs*/
proc corr data=stock;
    var NTAP;
    with ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC;
    run;
/*1-5 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with ACN ADBE AKAM AMD APH;
    run;
/*6-10 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with AAPL AMAT ANET ADSK AVGO;
    run;
/*11-15 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with CDNS CSCO CTSH ENPH EPAM;
    run;
/*16-20 graphs*/
```

```
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with FFIV FICO IT HPE INTC;
    run;
/*21-25 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with INTU JNPR KEYS KLAC LRCX;
    run;
/*26-30 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with MU MSFT MPWR NVDA NXPI;
    run;
/*31-35 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with ON ORCL PANW PTC ROP;
    run;
/*36-40 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with CRM NOW SEDG SNPS TEL;
    run;
/*41-42 graphs*/
proc corr data=stock plots=scatter(nvar = all);
    var NTAP;
    with TYL WDC;
    run;

/*multiple Regression*/
/*STEPWISE*/
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=stepwise SLENTRY=0.05;
    run;

/*STEPWISE MODEL*/
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV FICO INTU JNPR
    LRCX MU ON ORCL PANW
    ROP CRM NOW SEDG TEL;
    run;

/*FORWARD*/
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=forward SLENTRY=0.05;
    run;

/*FORWARDS MDOEL*/
proc reg data=stock;
    model NTAP=ACN JNPR TEL AKAM FICO
    PANW SEDG MU MSFT INTU
    CRM ENPH CTSH ORCL AMD
```

```
    ON ANET FFIV AMAT ADSK
    ROP NOW TYL;
    run;

/*BACKWARD*/
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=backward SLENTRY=0.05;
    run;

/*BACKWRDS MODEL*/
proc reg data=stock;
    model NTAP=AKAM AMD APH AAPL AMAT
    ANET ADSK ENPH FFIV FICO
    INTC INTU JNPR MU MSFT
    NXPI ON ORCL PANW ROP
    CRM NOW SEDG SNPS TEL
    TYL;
    run;

/*R^2*/
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=rsquare;
    run;

/*r^2 MODEL*/
proc reg data=stock;
    model NTAP = ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC;
    RUN;

/*ADJ R^2 */
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=adjrsq;
    run;

/* ADJ R^2 MODEL */
proc reg data=stock;
    model NTAP = ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
```

```
    ENPH FFIV FICO IT INTC
    INTU JNPR MU MSFT NXPI
    ON ORCL PANW ROP CRM
    NOW SEDG SNPS TEL TYL;
    RUN;

/*cp*/
proc reg data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=cp;
    run;

/* CP MODEL */
proc reg data=stock;
    model NTAP=AKAM AMD AAPL AMAT ANET
    ADSK AVGO ENPH FFIV FICO
    INTU JNPR KEYS MU NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC;
    run;

/*press*/
proc glmselect data=stock;
    model NTAP=ACN ADBE AKAM AMD APH
    AAPL AMAT ANET ADSK AVGO
    CDNS CSCO CTSH ENPH EPAM
    FFIV FICO IT HPE INTC
    INTU JNPR KEYS KLAC LRCX
    MU MSFT MPWR NVDA NXPI
    ON ORCL PANW PTC ROP
    CRM NOW SEDG SNPS TEL
    TYL WDC/selection=stepwise (choose=press);
    run;

/* PRESS MODEL*/
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK AVGO
    ENPH FFIV FICO INTU JNPR
    LRCX MU ON ORCL PANW
    ROP CRM NOW SEDG TEL;
    run;

/* best model from stepwise*/
/*test for multicolinearity*/
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV FICO INTU JNPR
    LRCX MU ON ORCL PANW
    ROP CRM NOW SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV FICO INTU JNPR
    MU ON ORCL PANW ROP
    CRM NOW SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV FICO INTU JNPR
    MU ON ORCL PANW
```

```
    ROP CRM SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV INTU JNPR
    MU ON ORCL PANW
    ROP CRM SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU ON ORCL PANW
    ROP CRM SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU ON ORCL PANW
    ROP SEDG TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU ON ORCL PANW
    ROP TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU ON PANW
    ROP TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU PANW
    ROP TEL/vif;
    run;
/* took out highest vif value over 10 */
proc reg data=stock;
    model NTAP=AKAM AMD ANET ADSK
    ENPH FFIV JNPR
    MU PANW TEL/vif;
    run;
/*take out insignifigant indep vars*/
/*model after taking out insignifigant terms and terms causing issues with multicolinearity*/
proc reg data=stock;
    model NTAP=AKAM AMD ENPH JNPR
    MU PANW TEL/vif;
    run;

/*quad terms*/
proc sgplot data=STOCK;
   scatter x=akam y=NTAP;
run;

proc sgplot data=stock;
   scatter x=amd y=NTAP;
run;

proc sgplot data=STOCK;
   scatter x=enph y=NTAP;
run;
```

```
proc sgplot data=stock;
   scatter x=jnpr y=NTAP;
run;

proc sgplot data=STOCK;
   scatter x=mu y=NTAP;
run;

proc sgplot data=stock;
   scatter x=panw y=NTAP;
run;

proc sgplot data=stock;
   scatter x=tel y=NTAP;
run;
/*enph, jnpr, mu looks like potential quad terms*/

/*interaction terms*/
/*AKAM*/
proc glm data=stock;
 model ntap=akam | amd / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=akam sliceby=amd);
run;

proc glm data=stock;
 model ntap=akam | enph / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=akam sliceby=enph);
run;

proc glm data=stock;
 model ntap=akam | JNPR / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=akam sliceby=JNPR);
run;

proc glm data=stock;
 model ntap=akam | MU / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=akam sliceby=MU);
run;

proc glm data=stock;
 model ntap=akam | PANW / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=akam sliceby=PANW);
run;

proc glm data=stock;
 model ntap=akam | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
```

```
    effectplot slicefit(x=akam sliceby=TEL);
run;
/*AMD*/
proc glm data=stock;
 model ntap=AMD | ENPH / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=AMD sliceby=ENPH);
run;

proc glm data=stock;
 model ntap=AMD | JNPR / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=AMD sliceby=JNPR);
run;

proc glm data=stock;
 model ntap=AMD | MU / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=AMD sliceby=MU);
run;

proc glm data=stock;
 model ntap=AMD | PANW / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=AMD sliceby=PANW);
run;

proc glm data=stock;
 model ntap=AMD | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=AMD sliceby=TEL);
run;

/*ENPH */
proc glm data=stock;
 model ntap=ENPH | JNPR / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=ENPH sliceby=JNPR);
run;

proc glm data=stock;
 model ntap=ENPH | MU / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=ENPH sliceby=MU);
run;

proc glm data=stock;
 model ntap=ENPH | PANW / solution;
 store GLMModel;
```

```
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=ENPH sliceby=PANW);
run;

proc glm data=stock;
 model ntap=ENPH | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=ENPH sliceby=TEL);
run;
/*JNPR*/
proc glm data=stock;
 model ntap=JNPR | MU / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=JNPR sliceby=MU);
run;

proc glm data=stock;
 model ntap=JNPR | PANW / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=JNPR sliceby=PANW);
run;

proc glm data=stock;
 model ntap=JNPR | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=JNPR sliceby=TEL);
run;
/*MU*/
proc glm data=stock;
 model ntap=MU| PANW / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=MU sliceby=PANW);
run;

proc glm data=stock;
 model ntap=MU | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=MU sliceby=TEL);
run;
/*PANW */
proc glm data=stock;
 model ntap=PANW | TEL / solution;
 store GLMModel;
 run;

proc plm restore=GLMModel noinfo;
   effectplot slicefit(x=PANW sliceby=TEL);
run;
/*TEL ALL ALREADY GRAPHED*/
/*new set with quad and interaction terms*/
```

```
Data stock2;
    set stock;
    ENPHSQ = ENPH*ENPH;
    JNPRSQ = JNPR*JNPR;
    MUSQ = MU*MU;
    AKAM_ENPH = AKAM*ENPH;
    AKAM_JNPR = AKAM*JNPR;
    AKAM_PANW = AKAM*PANW;
    AMD_ENPH = AMD*ENPH;
    AMD_JNPR = AMD*JNPR;
    AMD_MU = AMD*MU;
    AMD_PANW = AMD*PANW;
    ENPH_MU = ENPH*MU;
    ENPH_PANW = ENPH*PANW;
    ENPH_TEL = ENPH*TEL;
    MU_PANW = MU*PANW;
    MU_TEL = MU*TEL;
run;
/*testing quadratic terms */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    JNPRSQ MUSQ ENPHSQ;
    run;
/*remove insignifigant terms*/
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    JNPRSQ MUSQ;
    run;
/*quad model */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    JNPRSQ;
    run;
/*testin potential interatction terms */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AKAM_ENPH AKAM_JNPR AKAM_PANW
    AMD_ENPH AMD_JNPR AMD_MU AMD_PANW
    ENPH_MU ENPH_PANW ENPH_TEL
    MU_PANW MU_TEL;
    run;
/*remove insignifignat terms */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_ENPH AMD_JNPR ENPH_TEL;
    run;
/*remove insignifignat terms */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_ENPH AMD_JNPR;
    run;
/*best interaction model */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_JNPR;
    run;
/*model with interaction and one quad term*/
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_JNPR JNPRSQ;
    run;

/*/all*/
/*first order model */
proc reg data=stock;
    model NTAP=AKAM AMD ENPH JNPR
    MU PANW TEL/all;
    run;
/*quad model */
proc reg data=stock2;
```

```
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    JNPRSQ/all;
    run;
/*best interaction model */
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_JNPR/all;
    run;
/*model with interaction and one quad term*/
proc reg data=stock2;
    model NTAP=AKAM AMD ENPH JNPR MU PANW TEL
    AMD_JNPR JNPRSQ/all;
    run;
```