

EVIEWS MANU-SEUNG C. AHN

INSTRUCTION FOR ACCESSING AN INSTRUCTOR VOLUME

Special Note:

Before you can use the computers at ASU, you must first obtain an ASURITE ID. You may obtain the ASURITE ID at BAC (basement), BA (BA386), Goldwater and Computer Commons computing sites (see the support staff for assistance). Once you receive your ASURITE ID and have confirmed that it works, please follow the steps explained below to access my instructor volume. (Note: It would take a day until your ASURITE ID becomes effective.)

Problem Tips:

- If you have difficulty signing on, push the restart button (or turn the computer off and then on again) and start over at Step 1 below.
- DO NOT enter your ASURITE ID anywhere EXCEPT on the screen display over the ASU logo and photograph.

The computer may already be on. If the last student did not log out and the desktop screen still shows a set of icons, click on the **Log Out** icon and then click on **Log Me Out**.

Accessing the Instructor's Volume

1. At the ASU PC Network logon you will get a message: "Click OK for the next two requests."

Click on the **OK** button here.

Click **OK** and wait 1-2 minutes while the logon scripts execute.

Click **OK** to get to the sign on screen with the ASU logo displayed over an ASU photograph back ground.

2.
 - At the sign on screen enter your **ASURITE ID** and **password**. Enter both items in lower case.
 - Click on **OK**.
 - Wait during the message "Mounting AFS volumes." Soon the Window 95 desktop will be displayed.
3. Double click on the **Applications** folder icon on the desktop.
4. Double click on the **Instructor Volumes** folder icon on the desktop.
5. Find the icon named **ECN525** or **ECN527** or **ECN480**, and double click on it.
6. The U: drive instructor volume is now mounted but you can not see it until the current window is closed. Close the instructor volume window by clicking on **X** in the upper

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right corner of the window.

7. Click on the icon named **U: drive**.
8. Click on the directory called **eviews**.
9. Click on the file named **eviews.exe**.
10. Do whatever you want to do with Eviews.
11. When all jobs are done, click the **X** button on the top right corner of your screen. Then, Eviews will ask you whether you want to save all jobs you have done. You can choose **Yes** or **No** depending on your preference.

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USING EIEWS

[1] Reading Data

CASE WHEN YOU WANT TO IMPORT DATA FROM OTHER FILE

STEP 1: Click **File/New/Program**. Then, you will see a standard text editing window.

STEP 2: Type the followings

```
'FILE NAME = MW_READ.PRG
```

```
'THIS PROGRAM IS FOR READING NEW4.DB
```

```
CREATE U 923
```

```
READ(O) A:\NEW4.DB LRATE ED URB MINOR AGE TENURE EXPP REGS
```

```
OCCW OCCB INDUMG INDUMN UNION UNEMPR LOFINC HWORK
```

```
KIDS5
```

Warning: Do not use hard-return key when you type READ(O)

STEP 3: Push **Save-As** button to save the program.

STEP 4: Push **Run** button.

Note:

(1) In the Create line, "U" means undated data and 923 = # of obs.
"O" means ASCII file. For other formats, see the EVIEW manual.

- 1) For annual data, CREATE A 1972 1990
- 2) For quarterly data, CREATE Q 1992:1 1997:3
- 3) For monthly data, CREATE M 1992:1 1996:12
- 4) For weekly data, CREATE W 9:1:1975 12:31:1996
- 5) For daily data, CREATE D 9:1:1975 12:31:1996

(2) In the Read lines, "O" means ASCII file. For other possible formats, see the manual, p. 132.

CASE WHEN YOU WANT TO IMPORT DATA SAVED BY EIEWS

STEP 1: Using your mouse, choose **File/Open**.

STEP 2: Type the directory where the file is located and the file name.

STEP 3: Click **OK**.

CASE WHEN YOU WANT TO TYPE DATA

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STEP 1: In the EViews window, type

```
CREATE U 15  
DATA Y X
```

STEP 2: Push the hard-return key. Then, you will see a spread sheet.
Insert data from the keyboard.

```
Y    X  
70   80  
65   100  
90   120  
95   140  
110  160  
115  180  
120  200  
140  220  
155  240  
150  260  
NA   300  
NA   400  
NA   500  
NA   600  
NA   700
```

STEP 3: Click **X** (exit button) in the top right corner of the spread sheet.
Then, Eviews will ask you whether you wish to delete untitled GROUP.
Click **Yes**.

[2] Saving Data

STEP 1: Push **File/Save As** button.
STEP 2: Go to **drivers** and choose **a:**
STEP 3: Go to **File Names**. Type, for example,

```
JOHNDOE.WF1 (return)
```

[3] Creating Some Variables

STEP 1: Push **Genr** button.
STEP 2: Type:

```
LNN = LOG(X) (return) [Here, LOG is the natural log.]
```

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STEP 3: Type:

LNY = LOG(Y) (return)
[Here, LOG is the natural log.]

Other Examples:

INVY = 1/Y
XY = X*Y
LY = Y(-1)
DLY = DLOG(Y)

[4] Choosing a sample range

STEP 1: In the work file, push **Sample** button.

STEP 2: In **Sample Range Pairs** box, type "1 10".

[Another example: In **If Condition** box, type "X>200"]

[5] Obtaining Data Statistics

STEP 1: Push **Show** button.

STEP 2: Type "X Y". Then, click **ok**.

STEP 3: Click **View/Descriptive Stats/Individual Samples**.

Then, you will see:

	X	Y
Mean	170.0000	111.0000
Median	170.0000	112.5000
Maximum	260.0000	155.0000
Minimum	80.00000	65.00000
Std. Dev.	60.55301	31.42893
Skewness	0.000000	-0.035540
Kurtosis	1.598182	1.632879
Jarque-Bera	0.818789	0.780864
Probability	0.664052	0.676765

$$\text{Std. Dev. of X} = \sqrt{\frac{\sum_1 (X_i - \bar{X})^2}{n-1}}; \text{ Std. Dev. of Y} = \sqrt{\frac{\sum_1 (Y_i - \bar{Y})^2}{n-1}}$$

Skewness of X = Estimate of $E[(X - \mu_X)^3 / \sigma_X^3]$.

[If X is normally distributed, Skewness is close to zero.]

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Kurtosis of X = Estimate of $E[(X-\mu_x)^4/\sigma_x^4]$.

[If X is normally distributed, kurtosis is close to 2.]

Jarque-Bera statistic = a test statistic for normality of X or Y.

[Under the null hypothesis of normality, the statistic is $\chi^2(2)$ -distributed.]

[Consider the value of the J-B statistic for X. If you choose $\alpha = 0.05$, do not reject H_0 .]

STEP 4: If you want to print out the results, push **Print** button.

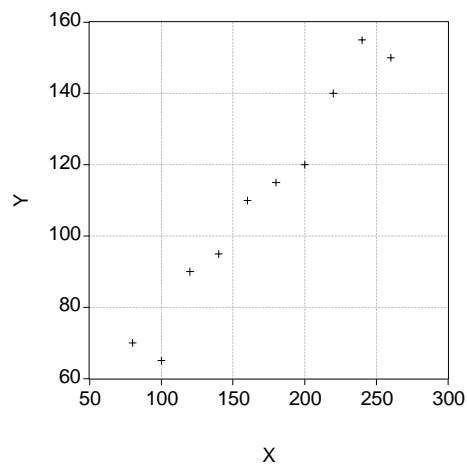
STEP 5: Click **X** in the top right corner of the spread sheet. When asked if you want to delete untitled GROUP, click **Yes**.

[6] Scatter Diagram

STEP 1: In the EViews window, type

scat X Y (return)

Then, you will see:



STEP 2: Click **X** in the top right corner of the graph window. When asked if you want to delete untitled GRAPH, click **Yes**.

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[7] OLS Regression

- STEP 1: Push **Objects/New Object**.
 STEP 2: Choose **Equation**. If you push **OK** button. Then, you are in **Equation Specification** box.
 STEP 3: Type

Y C X
 or Y=C(1)+C(2)*X
 [Another example: LOG(Y) C LOG(X)]

Then, you will see:

LS // Dependent Variable is Y
 Date: 10/06/97 Time: 12:24
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	24.45455	6.413817	3.812791	0.0051
X	0.509091	0.035743	14.24317	0.0000
R-squared	0.962062	Mean dependent var		111.0000
Adjusted R-squared	0.957319	S.D. dependent var		31.42893
S.E. of regression	6.493003	Akaike info criterion		3.918307
Sum squared resid	337.2727	Schwarz criterion		3.978824
Log likelihood	-31.78092	F-statistic		202.8679
Durbin-Watson stat	2.680127	Prob(F-statistic)		0.000001

Note:

- (1) $24.45455 \rightarrow \hat{\beta}_1$; $6.413817 \rightarrow \text{se}(\hat{\beta}_1)$.
- (2) $0.509091 \rightarrow \hat{\beta}_2$; $0.035743 \rightarrow \text{se}(\hat{\beta}_2)$.
- (3) $3.81 \rightarrow t$ statistic for $H_0: \beta_1 = 0$.
 $0.0051 \rightarrow p$ -value for testing $H_0: \beta_1 = 0$ against $H_a: \beta_1 \neq 0$.
 [If you choose $\alpha = 0.05$, reject H_0 ; if $\alpha = 0.0001$, accept H_0 .]
- (4) $14.24317 \rightarrow t$ statistic for $H_0: \beta_2 = 0$.
 $0.0000 \rightarrow p$ -value for testing $H_0: \beta_2 = 0$ against $H_a: \beta_2 \neq 0$.
 [If you choose $\alpha = 0.05$, reject H_0 ; if $\alpha = 0.0001$, reject H_0 .]
- (5) R-Square $\rightarrow R^2$; Adjusted R-squared $\rightarrow \bar{R}^2$.
- (6) S.E. of regression $\rightarrow \sqrt{s^2}$.
- (7) Sum squared resid $\rightarrow \text{RSS}$
- (8) Adjusted R-Square $\rightarrow \bar{R}_2$.

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- (9) Mean dependent var $\rightarrow \bar{Y}$.
- (10) S.D. dependent var $\rightarrow \sqrt{s_y^2} = \sqrt{\frac{\sum_i (Y_i - \bar{Y})^2}{n - 1}}$.
- (11) F-statistic $\rightarrow F$ for $H_0: \beta_2 = 0$
- (12) Prob(F-statistic) \rightarrow p-value for the F test.
- (13) Durbin-Watson stat \rightarrow a test for autocorrelation.

Note:

If you want to adjust heteroskedasticity or autocorrelation, push **Option** button. And Choose White or Newey-West. When it is done, Click **OK**.

STEP 4: Click **view/coefficient tests/Wald-coefficient restrictions**. If you want to test for $H_0: \beta_1 = \beta_2 = 0$, type

$$c(1) = 0, c(2) = 0 .$$

Then, you will see

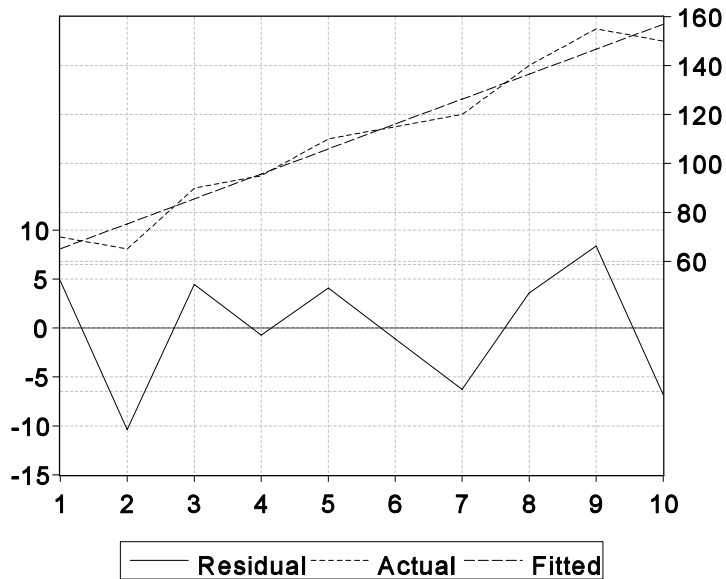
Wald Test:
Equation: Untitled

Null Hypothesis: C(1) = 0
C(2) = 0

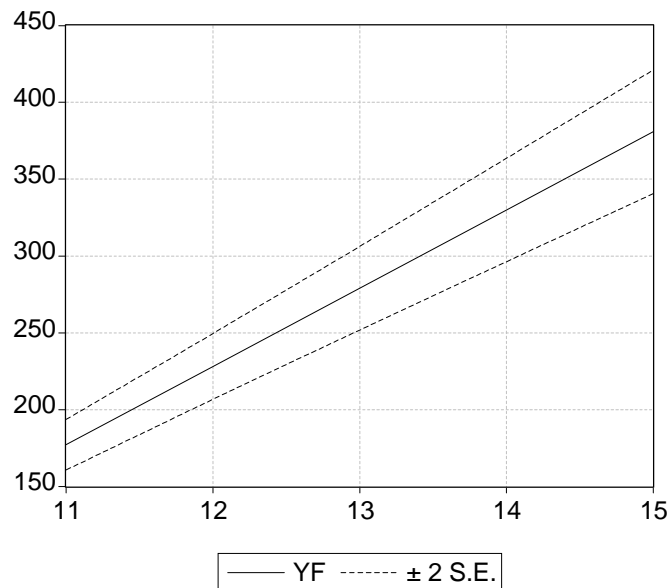
F-statistic	1562.685	Probability	0.000000
Chi-square	3125.369	Probability	0.000000

STEP 5: Click the **resid** button. Then, you will see:

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- STEP 6: Click the **X** button in the top right corner of the graph window.
 STEP 7: Click the **forecast** button. Go to **S.E. (Optional)** and type "yes". Go to **Sample range for forecast.** and type "11 15". Go to **output** and click on **do graph**. Now, click on the **Yes** button. Then, you will see:



- STEP 8: Click the **X** button in the top right corner of the graph window.
 STEP 9: Go to the Eviews window. Type "smpl 11 15" and push the return key. Type "show yf yse" and push the return key. Then, you will see

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YF	YSE
177.181818182	8.2441230424
228.090909091	10.6750784669
279	13.6198384719
329.909090909	16.8105224164
380.818181818	20.1305313395

STEP 10: Click the **X** button in the top right corner of the spread sheet.

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[8] Data information: mwemp.wf1:

This is the data set of working married women in 1981 sampled from PSID. Total number of observations are 923, and 17 variables are observed.

VARIABLES	DEFINITION
LRATE	LOG OF HOURLY WAGE RATE (\$)
ED	YEARS OF EDUCATION
URB	URB=1 IF RESIDENT IN SMSA
MINOR	MINOR=1 IF BLACK AND HISPANIC
AGE	YEARS OF AGE
TENURE	MONTHS UNDER THE CURRENT EMPLOYER
EXPP	NUMBER OF YEARS WORKED SINCE AGE 18
REGS	REGS=1 IF LIVES IN THE SOUTH OF U.S.
OCCW	OCCW=1 IF WHITE COLOR
OCCB	OCCB=1 IF BLUE COLOR
INDUMG	INDUMG=1 IF IN THE MANUFACTURING INDUSTRY
INDUMN	INDUMN=1 IF NOT IN MANUFACTURING SECTOR
UNION	UNION=1 IF UNION MEMBER
UNEMPR	% UNEMPLOYMENT RATE IN THE RESIDENT'S COUNTY, 1980
LOFINC	LOG OF OTHER FAMILY MEMBER'S INCOME IN 1980 (\$)
HWORk	HOURS OF HOMEWORK PER WEEK
KIDS5	NUMBER OF CHILDREN ≤ 5 YEARS OF AGE

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[9] GMM (or 2SLS) for an Single Equation

- STEP 1: Push **Objects/New Object**.
STEP 2: Choose **Equation**. And push **OK** button. Then, you are in **Equation Specification** box.
STEP 3: Choose **GMM**.
STEP 4: Choose any options you like for weighting matrix.
STEP 5: In **Equation Specification** box, type

LRATE C LHWORk
or LRATE=C(1)+C(2)*LHWORk
or LRATE=C(1)+C(2)*(EXPP^C(3)+TENURE^C(4))

- STEP 6: In **Instrument List** box, type

URB TENURE KIDS5

- STEP 7: Click OK.

NOTE: Whether you include C in the instrument set or not, EIEWS will include C as an instruments.

NOTE: The reported J-statistic is equal to the Hansen statistic divided by # of observations.

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[10] GMM (or 3SLS) for Multiple Equations

STEP 1: Push **Objects/New Object**.

STEP 2: Choose **System**. Push OK button. Then, you are in **System Specification** box.

STEP 3: Type:

$$\text{LRATE} = \text{C}(1) + \text{C}(2) * \text{LHWORK} + \text{C}(3) * \text{TENURE}$$

$$\text{LHWORK} = \text{C}(4) + \text{C}(5) * \text{LRATE} + \text{C}(6) * \text{KIDS5}$$

INST C TENURE KIDS5 URB (if instruments are the same for all equations)

or
 $\text{LRATE} = \text{C}(1) + \text{C}(2) * \text{LHWORK} + \text{C}(3) * \text{TENURE} @ \text{TENURE KIDS5 URB}$
 $\text{LHWORK} = \text{C}(4) + \text{C}(5) * \text{LRATE} + \text{C}(6) * \text{KIDS5} @ \text{TENURE KIDS5 UNEMPR}$

STEP 4: Click **Estimate** button.

STEP 5: Choose any option you like for estimation method and weighting matrix.

- Iterative Weights and Coeffs/Simultaneous \Rightarrow Iterative GMM
- Iterative Weights and Coeffs/Sequential \Rightarrow Iterative GMM
- One-Step Weighting Matrix/Iterative Coeffs \Rightarrow Two-step GMM
- One-Step Weighting Matrix/One-Step Coeffs
 \Rightarrow Linearized GMM of Newey (1985, Journal of Econometrics)

STEP 6: Click OK.

NOTE: Whether you include C in the instrument set or not, EViews will include C as an instruments.

NOTE: The reported J-statistic is equal to the Hansen statistic divided by # of observations.

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[11] ARMA MODELS (Use ECN527A.WF1: Quaterly data from 1947:1 to 1996:1)

(1) Estimation

STEP 1: Push **Objects/New Object**.

STEP 2: Choose **Equation**. Push OK button. Then, you are in **Equation Specification** box.

STEP 3: In **Equation Specification** box, type:

DCPIQ C AR(1) AR(2) MA(1) MA(2)

Or DCPIQ C DCPIQ(-1) DCPIQ(-2) MA(1) MA(2)

STEP 4: Go to **SAMPLE** and type:

1947:1 1993:4

STEP 5: Click the **option button**. Increase the convergence rate (0.0001) and increase maxit to 1000. Choose Heteroskedasticity-Robust Covariance matrix (for QMLE). Choose White. Once you have chosen appropriate options, click the **ok** button.

STEP 6: Run the program.

(2) Estimation Results

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Dependent Variable: DCPIQ

Method: Least Squares

Date: 04/03/00 Time: 16:03

Sample(adjusted): 1947:4 1993:4

Included observations: 185 after adjusting endpoints

Convergence achieved after 12 iterations

White Heteroskedasticity-Consistent Standard Errors & Covariance

Backcast: 1947:2 1947:3

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.755767	0.388658	1.944555	0.0534
AR(1)	0.424504	0.175735	2.415585	0.0167
AR(2)	0.516361	0.167654	3.079917	0.0024
MA(1)	0.326202	0.147461	2.212128	0.0282
MA(2)	-0.463088	0.101544	-4.560452	0.0000
R-squared	0.787392	Mean dependent var		0.667748
Adjusted R-squared	0.782668	S.D. dependent var		0.667652
S.E. of regression	0.311252	Akaike info criterion		0.530228
Sum squared resid	17.43802	Schwarz criterion		0.617265
Log likelihood	-44.04612	F-statistic		166.6576
Durbin-Watson stat	2.055823	Prob(F-statistic)		0.000000
Inverted AR Roots	.96	-.54		
Inverted MA Roots	.54	-.86		

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(2) **Wald Test:**

If you wish to test multiple restrictions on parameters, go to **view/coefficient tests**.

(3) **Specification Tests Based on ARMA-Corrected Residuals**

1) For Specification tests, go to **view/residual tests/correlogram-Q statistics**.

[About e_t . If your model is correctly specified, then the ARMA-corrected residuals should be serially uncorrelated.]

Date: 04/03/00 Time: 16:09

Sample: 1947:4 1993:4

Included observations: 185

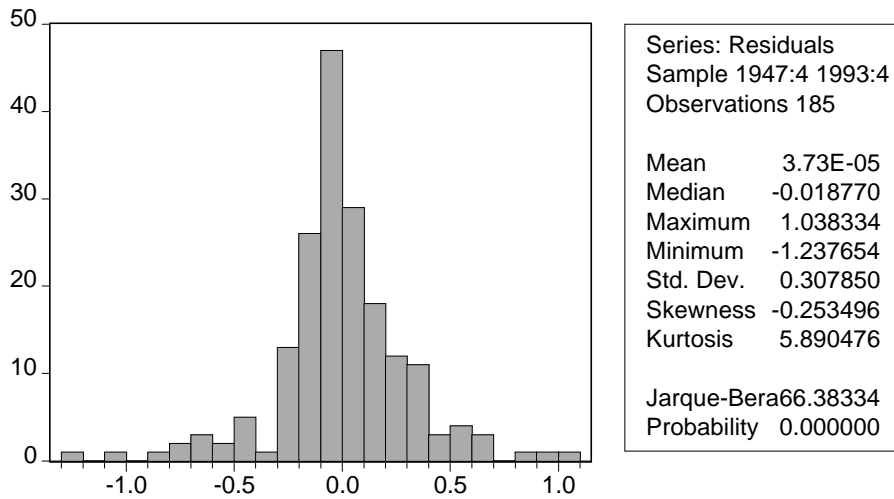
Q-statistic probabilities
adjusted for 4 ARMA
term(s)

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
. .	. .	1 -0.036	-0.036	0.2425	
. .	. .	2 -0.003	-0.005	0.2447	
. *	. *	3 0.150	0.150	4.5332	
. .	. .	4 -0.007	0.004	4.5433	
* .	* .	5 -0.097	-0.099	6.3464	0.012
. *	. *	6 0.131	0.105	9.6643	0.008
. .	. .	7 0.036	0.048	9.9207	0.019
** .	* .	8 -0.194	-0.174	17.244	0.002
. .	* .	9 -0.034	-0.085	17.468	0.004
. .	. .	10 0.055	0.046	18.066	0.006
* .	* .	11 -0.153	-0.082	22.736	0.002
* .	* .	12 -0.096	-0.114	24.591	0.002
. *	. *	13 0.133	0.092	28.170	0.001
. .	. *	14 0.052	0.148	28.715	0.001
* .	* .	15 -0.159	-0.126	33.847	0.000

2) Go to **view/residual tests/histogram-normality**.

[About v_t . If your model is correctly specified, then the ARMA-corrected residuals should be serially uncorrelated.]

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3) Go to **view/residual tests/serial correlation LM test** Choose Lag =2.

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	2.136090	Probability	0.121134
Obs*R-squared	4.336113	Probability	0.114400

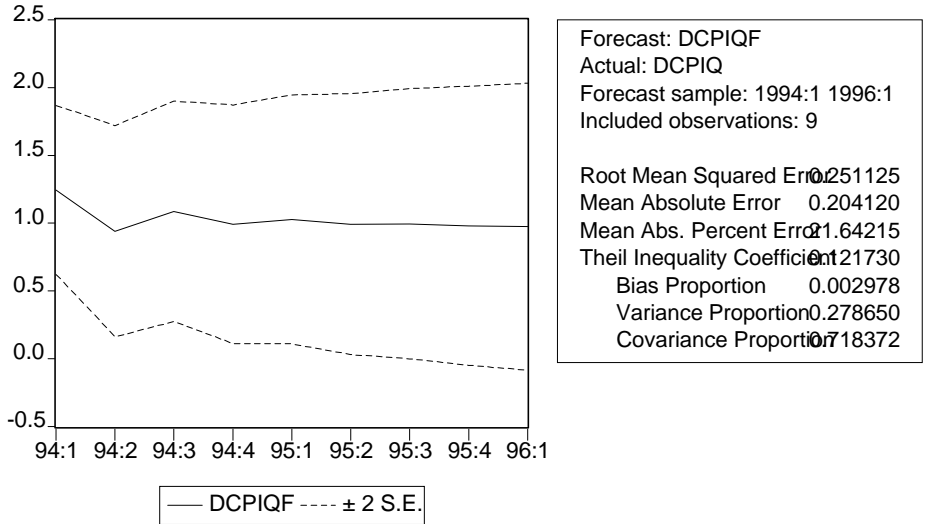
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.033063	0.338138	-0.097781	0.9222
AR(1)	0.477981	0.442870	1.079280	0.2819
AR(2)	-0.478607	0.419614	-1.140588	0.2556
MA(1)	0.147657	0.343731	0.429572	0.6680
MA(2)	0.256184	0.259217	0.988297	0.3243
RESID(-1)	-0.659502	0.320335	-2.058790	0.0410
RESID(-2)	0.060665	0.310070	0.195650	0.8451

R-squared	0.023438	Mean dependent var	3.73E-05
Adjusted R-squared	-0.009479	S.D. dependent var	0.307850
S.E. of regression	0.309306	Akaike info criterion	0.528132
Sum squared resid	17.02930	Schwarz criterion	0.649984
Log likelihood	-41.85226	F-statistic	0.712029
Durbin-Watson stat	1.986239	Prob(F-statistic)	0.640340

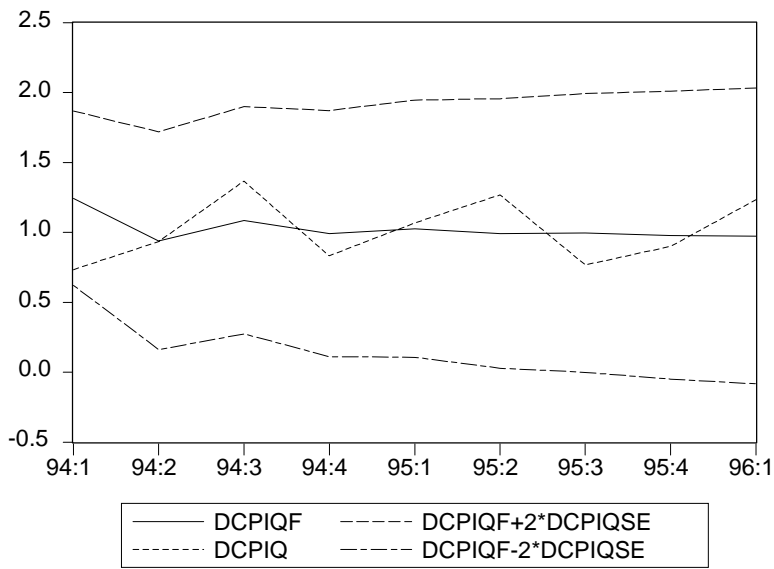
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(4) Forecast: from 1994:2 to 1996:1

- Puch to the Forecast button.
- Go to S.E. box and type “dcpiqse”.
- Go to “Sample Range for Forecast” and type “1994:1 1996:1”. Then, we will see:



- In the eview window, type “smpl 1994:1 1996:1”.
- In the window, type “ dcpiq dcpif (dcpif-2*dcpiqse) (dcpiq+2*dcpiqse)”. Then, a spreast sheet. Puch **view\graph\line**. Then, we will see:



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[12] GARCH

(1) Estimation

STEP 1: Push **Objects/New Object**.

STEP 2: Choose **Equation**. Push OK button. Then, you are in **Equation Specification** box. Go to **Equation Setting**, and Choose **ARCH**.

STEP 3: In **Equation Specification** box, type:

dy100 c

STEP 4: Go to **Equation Setting** and type:

2 1001

STEP 5: Click the **option button**. Increase the convergence rate (0.0001) and increase maxit to 1000. Choose algorithm and Heteroskedasticity-Robust Covariance matrix (for QMLE). Once you have chosen appropriate options, click the **ok** button.

STEP 6: Choose a specification and run the program.

(2) GARCH(1,2)

$$y_t = \beta + u_t; h_t = \omega + \delta_1 h_{t-1} + \alpha_1 u_{t-1}^2 + \alpha_2 u_{t-2}^2;$$

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Dependent Variable: DY100

Method: ML - ARCH

Date: 04/03/00 Time: 16:26

Sample(adjusted): 2 1001

Included observations: 1000 after adjusting endpoints

Convergence achieved after 42 iterations

Bollerslev-Wooldrige robust standard errors & covariance

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.049709	0.021991	2.260437	0.0238
Variance Equation				
C	0.010867	0.006700	1.622076	0.1048
ARCH(1)	0.032561	0.050742	0.641692	0.5211
ARCH(2)	0.015376	0.052303	0.293984	0.7688
GARCH(1)	0.932021	0.028271	32.96791	0.0000
R-squared	-0.000051	Mean dependent var		0.044314
Adjusted R-squared	-0.004071	S.D. dependent var		0.755497
S.E. of regression	0.757033	Akaike info criterion		2.205777
Sum squared resid	570.2337	Schwarz criterion		2.230316
Log likelihood	-1097.888	Durbin-Watson stat		2.137029

(3) TARCH(1,2)

$$y_t = \beta + u_t; h_t = \omega + \delta_1 h_{t-1} + \alpha_1 u_{t-1}^2 + \gamma_1 (u_{t-1}^2) \mathbf{1}(u_{t-1} < 0) + \alpha_2 u_{t-2}^2:$$

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Dependent Variable: DY100
 Method: ML - ARCH
 Date: 04/03/00 Time: 16:28
 Sample(adjusted): 2 1001
 Included observations: 1000 after adjusting endpoints
 Convergence achieved after 28 iterations
 Bollerslev-Wooldrige robust standard errors & covariance

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.047872	0.021862	2.189744	0.0285
Variance Equation				
C	0.007089	0.008815	0.804239	0.4213
ARCH(1)	0.028297	0.034449	0.821422	0.4114
(RESID<0)*ARCH(1)	0.004401	0.017584	0.250280	0.8024
GARCH(1)	1.312629	0.852429	1.539868	0.1236
GARCH(2)	-0.356171	0.803179	-0.443452	0.6574
R-squared	-0.000022	Mean dependent var		0.044314
Adjusted R-squared	-0.005053	S.D. dependent var		0.755497
S.E. of regression	0.757403	Akaike info criterion		2.207258
Sum squared resid	570.2172	Schwarz criterion		2.236705
Log likelihood	-1097.629	Durbin-Watson stat		2.137091

(4) EGRACH(1,2)

$$y_t = \beta + u_t;$$

$$\ln(h_t) = \omega + \delta \ln(h_{t-1}) + \alpha_1 \eta_{t-1} + \alpha_2 \eta_{t-2}; \eta_{t-1} = |v_{t-1}| - E(|v_{t-1}|) + \gamma_1 v_{t-1}; \eta_{t-2} = |v_{t-2}| - E(|v_{t-2}|) + \gamma_2 v_{t-2}$$

$$\Rightarrow \ln(h_t) = \omega + \delta \ln(h_{t-1}) + \{\alpha_1(|v_{t-1}| - E|v_{t-1}|) + \alpha_1 \gamma_1 v_{t-1}\} + \{\alpha_2(|v_{t-2}| - E|v_{t-2}|) + \alpha_2 \gamma_2 v_{t-2}\}$$

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Dependent Variable: DY100

Method: ML - ARCH

Date: 04/03/00 Time: 16:43

Sample(adjusted): 2 1001

Included observations: 1000 after adjusting endpoints

Convergence achieved after 47 iterations

Bollerslev-Wooldrige robust standard errors & covariance

	Coefficient	Std. Error	z-Statistic	Prob.
C	0.046725	0.022159	2.108595	0.0350
Variance Equation				
C	-0.040548	0.035358	-1.146777	0.2515
RES /SQR[GARCH](1)	0.045956	0.039668	1.158513	0.2467
RES/SQR[GARCH](1)	0.004615	0.009793	0.471314	0.6374
EGARCH(1)	1.563571	0.382723	4.085382	0.0000
EGARCH(2)	-0.571963	0.375954	-1.521364	0.1282
R-squared	-0.000010	Mean dependent var		0.044314
Adjusted R-squared	-0.005040	S.D. dependent var		0.755497
S.E. of regression	0.757398	Akaike info criterion		2.209685
Sum squared resid	570.2104	Schwarz criterion		2.239132
Log likelihood	-1098.843	Durbin-Watson stat		2.137116

(5) GARCH(1,2)-M with Variance

$$y_t = \beta + \lambda h_t + u_t;$$

$$h_t = \omega + \delta h_{t-1} + \alpha_1 u_{t-1}^2 + \alpha_2 u_{t-2}^2.$$

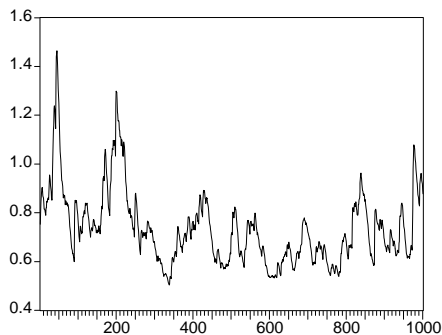
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Dependent Variable: DY100
 Method: ML - ARCH
 Date: 04/03/00 Time: 16:45
 Sample(adjusted): 2 1001
 Included observations: 1000 after adjusting endpoints
 Convergence achieved after 46 iterations
 Bollerslev-Wooldrige robust standard errors & covariance

	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	-0.210455	0.122764	-1.714315	0.0865
C	0.155385	0.064306	2.416321	0.0157
Variance Equation				
C	0.009611	0.007936	1.211117	0.2259
ARCH(1)	0.036125	0.027316	1.322476	0.1860
GARCH(1)	1.381466	0.506710	2.726347	0.0064
GARCH(2)	-0.434450	0.470056	-0.924252	0.3554
R-squared	0.005024	Mean dependent var		0.044314
Adjusted R-squared	0.000019	S.D. dependent var		0.755497
S.E. of regression	0.755490	Akaike info criterion		2.207335
Sum squared resid	567.3398	Schwarz criterion		2.236781
Log likelihood	-1097.667	F-statistic		1.003836
Durbin-Watson stat	2.146356	Prob(F-statistic)		0.414162

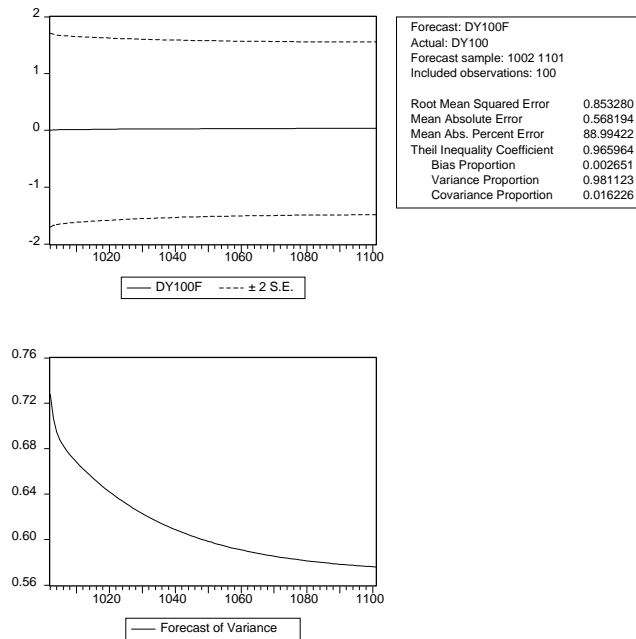
(6) Graph for $\sqrt{h_t}$.

Go to **view/conditional SD graph**.



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(7) Forecast: from 1002 to 1101



(8) Wald Test:

If you wish to test multiple restrictions on parameters, go to **view/coefficient tests**.

(9) Specification tests based on standardized residuals

1) For Specification tests, go to **view/residual tests/correlogram-Q statistics**.

[About v_t . If your model is correctly specified, then the standardized residuals should be serially uncorrelated.]

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Date: 04/03/00 Time: 16:49

Sample: 2 1001

Included observations: 1000

Autocorrelation		Partial Correlation		AC	PAC	Q-Stat	Prob	
*		*		1	-0.065	-0.065	4.1978	0.040
.		.		2	0.010	0.006	4.2946	0.117
.		.		3	0.006	0.007	4.3312	0.228
.		.		4	0.049	0.050	6.7941	0.147
.		.		5	0.009	0.015	6.8678	0.231
.		.		6	-0.019	-0.018	7.2219	0.301
.		.		7	0.008	0.005	7.2852	0.400
.		.		8	-0.012	-0.014	7.4395	0.490
.		.		9	0.028	0.026	8.2582	0.508
.		.		10	0.011	0.016	8.3730	0.592
.		.		11	0.013	0.014	8.5381	0.664
.		.		12	-0.022	-0.020	9.0221	0.701
.		.		13	-0.036	-0.041	10.306	0.669
.		.		14	0.038	0.031	11.788	0.623
.		.		15	0.017	0.022	12.069	0.674

2) Go to **view/residual tests/correlogram squared residuals.**

[About v_t^2 . If your model is correctly specified, then squared standardized residuals should be serially uncorrelated.]

Date: 04/03/00 Time: 16:51

Sample: 2 1001

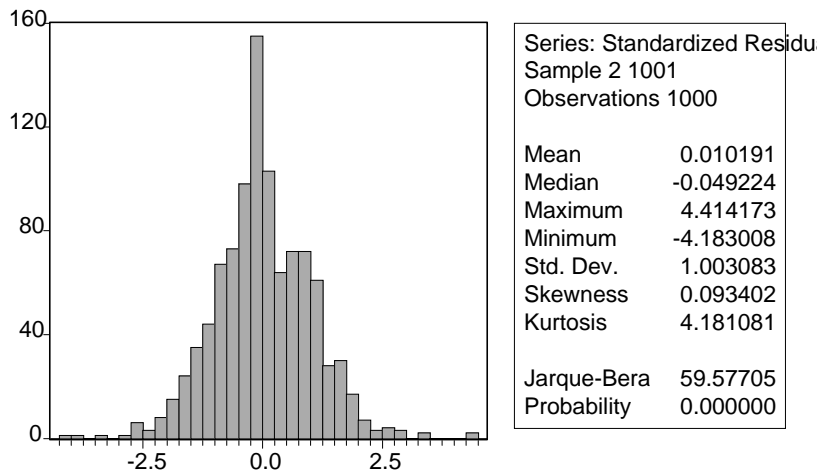
Included observations: 1000

Autocorrelation		Partial Correlation		AC	PAC	Q-Stat	Prob	
.		.		1	0.010	0.010	0.1052	0.746
.		.		2	-0.032	-0.032	1.1219	0.571
.		.		3	-0.016	-0.015	1.3787	0.711
.		.		4	0.036	0.035	2.6861	0.612
.		.		5	0.006	0.004	2.7185	0.743
.		.		6	-0.016	-0.015	2.9927	0.810
.		.		7	-0.011	-0.010	3.1200	0.874
.		.		8	0.012	0.010	3.2721	0.916
.		.		9	0.025	0.023	3.9068	0.917
.		.		10	0.008	0.009	3.9701	0.949

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.		.		11	-0.041	-0.039	5.7012	0.893
.		.		12	-0.016	-0.015	5.9587	0.918
.		.		13	-0.042	-0.046	7.7774	0.858
.		.		14	-0.004	-0.006	7.7909	0.900
.		.		15	0.055	0.056	10.905	0.759
.		.		16	-0.026	-0.027	11.588	0.772

3) Go to **view/residual tests/histogram normality test.**



4) Go to **view/residual tests/ARCH LM tests.** Set Lag = 4.

[If you model is correctly specified, then standardized errors should not include any ARCH effects.]

ARCH Test:

F-statistic	0.668245	Probability	0.614110
Obs*R-squared	2.679241	Probability	0.612852

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[13] VAR (Use ECN527A.WF1)

(1) Estimation

STEP 1: Push **Objects/New Object**.

STEP 2: Choose **VAR**. Push OK button. Then, you are in the VAR specification box.

STEP 3: In **Endogenous** box, type:

DCPIQ DM1Q

In **Exogenous** box, type:

C

STEP 4: Go to **Lag Intervals** and type:

1 4

STEP 5: Go to **Sample** and type:

1947:1 1993:4

STEP 6: Click the **ok** button.

(2) Output

Date: 04/03/00 Time: 17:02

Sample(adjusted): 1948:2 1993:4

Included observations: 183 after adjusting
endpoints

Standard errors & t-statistics in parentheses

	DCPIQ	DM1Q
DCPIQ(-1)	0.706591 (0.07638) (9.25149)	-3.600427 (0.93117) (-3.86655)
DCPIQ(-2)	-0.043014 (0.08557) (-0.50267)	2.078460 (1.04329) (1.99222)
DCPIQ(-3)	0.481300 (0.08679) (5.54534)	-1.349241 (1.05819) (-1.27505)

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DCPIQ(-4)	-0.250665 (0.07539) (-3.32471)	3.798617 (0.91921) (4.13247)
DM1Q(-1)	0.017059 (0.00607) (2.80975)	0.559664 (0.07402) (7.56101)
DM1Q(-2)	0.003026 (0.00724) (0.41781)	0.213329 (0.08830) (2.41587)
DM1Q(-3)	-0.004262 (0.00733) (-0.58180)	0.234093 (0.08931) (2.62106)
DM1Q(-4)	-0.010097 (0.00639) (-1.57959)	-0.113312 (0.07793) (-1.45398)
C	0.037734 (0.03345) (1.12811)	0.187499 (0.40781) (0.45977)
<hr/>		
R-squared	0.808541	0.782031
Adj. R-squared	0.799738	0.772009
Sum sq. resids	15.69804	2333.425
S.E. equation	0.300364	3.662034
F-statistic	91.85111	78.03463
Log likelihood	-34.94630	-492.5887
Akaike AIC	0.480287	5.481844
Schwarz SC	0.638131	5.639688
Mean dependent	0.668670	5.529262
S.D. dependent	0.671195	7.669436
<hr/>		
Determinant Residual Covariance		1.032561
Log Likelihood		-522.2633
Akaike Information Criteria		5.904517
Schwarz Criteria		6.220204

(3) Information on residuals

Go to **view/residual/correlation matrix**.

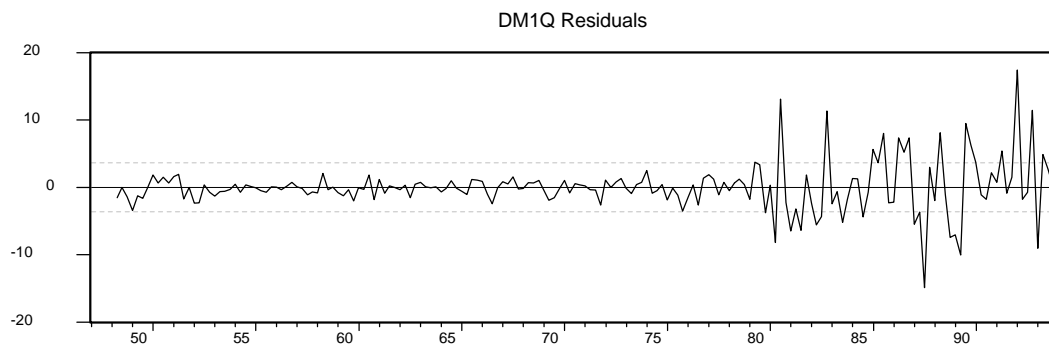
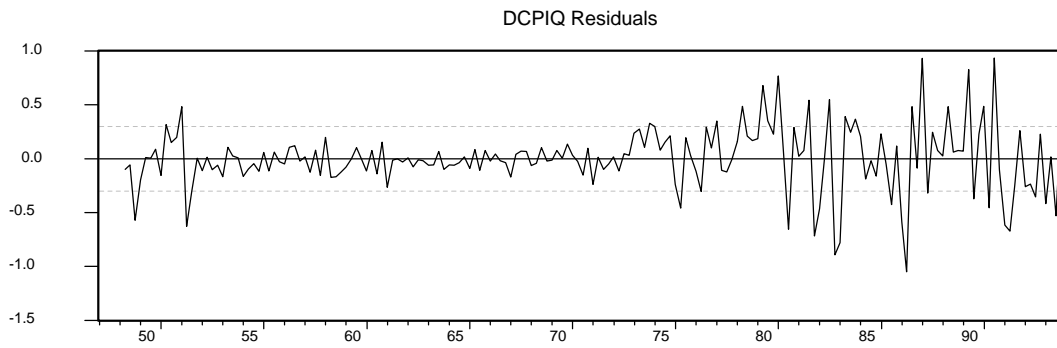
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	DCPIQ	DM1Q
DCPIQ	1.000000	-0.236614
DM1Q	-0.236614	1.000000

Go to **view/residual/covariance matrix**.

	DCPIQ	DM1Q
DCPIQ	0.085782	-0.247462
DM1Q	-0.247462	12.75096

Go to **view/residual/graph**.

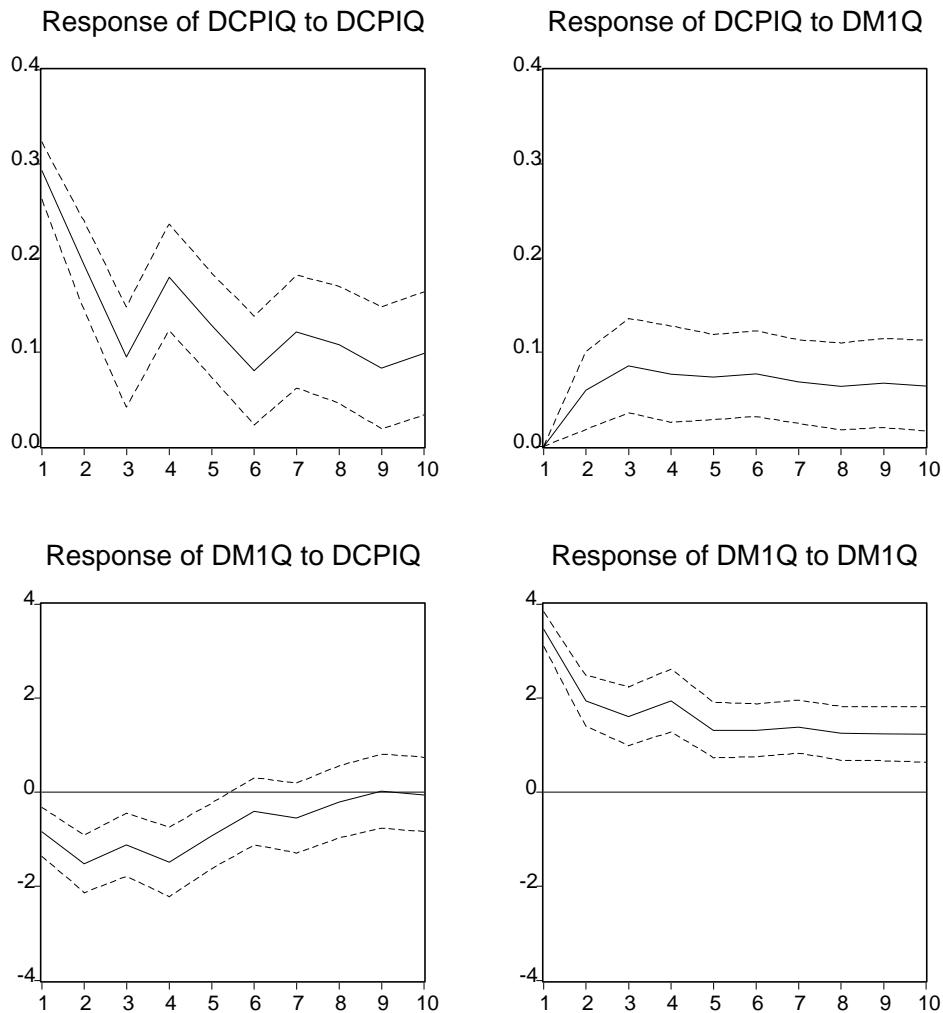


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(4) Impulse Response Function

- STEP 1: Go to **view/impulse-var decomposition**.
- STEP 2: Go to the **display type** box. Choose **Multiple Graphs** (or **table**) and **Impulse**.
- STEP 3: Go to the **response standard errors** box. Choose **Monte Carlo** and type 1000 for repetitions. (In fact, the optimal # of repetitions = 10,000).
- STEP 4: Go to “the ordering” box.
- STEP 5: Click the **ok** button.

Response to One S.D. Innovations ± 2 S.E.



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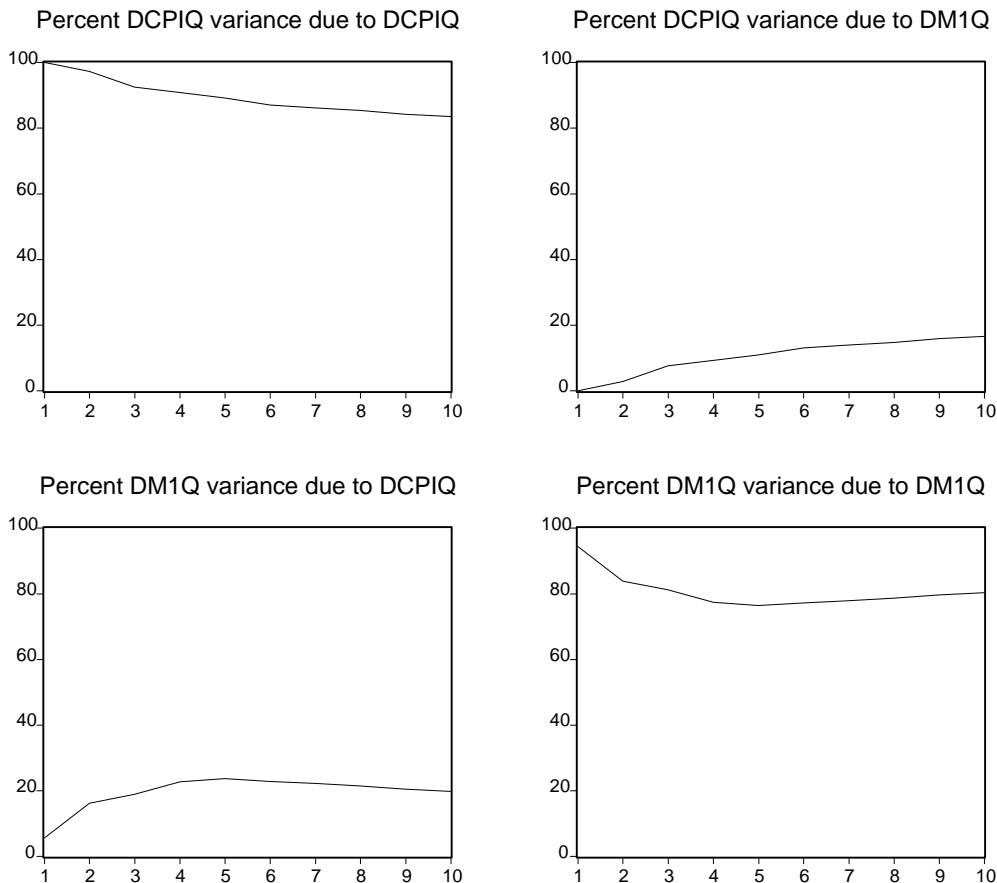
(5) Variance Decomposition

STEP 1: Go to **view/impulse-var decomposition**.

STEP 2: Go to the **display type** box. Choose **Multiple Graphs** (or **table**) and **Variance decomp.**

STEP 3: Click the **ok** button.

Variance Decomposition



(6) Forecast

STEP 1: Go to **view/representation**.

STEP 2: Go to **proc/make model**.

STEP 3: Go to **solve**.

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- STEP 4: Go to the **sample** box and type:
1994:2 1996:1.
- STEP 5: Click the **ok** button.
- STEP 6: EView will create forecasted values of DCPIQ and DM1Q in the name of DCPIQF and DM1QF.

