Application: Stock-Watson (*JEP* 2001**)**

$$\mathbf{A}\begin{pmatrix} \pi_t \\ U_t \\ R_t \end{pmatrix} = \mathbf{C}(L)\begin{pmatrix} \pi_{t-1} \\ U_{t-1} \\ R_{t-1} \end{pmatrix} + \begin{pmatrix} v_t^1 \\ v_t^2 \\ v_t^P \end{pmatrix}$$

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

c
infl
r
resid
u

StockWatson_data VAR_analysis New Page

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

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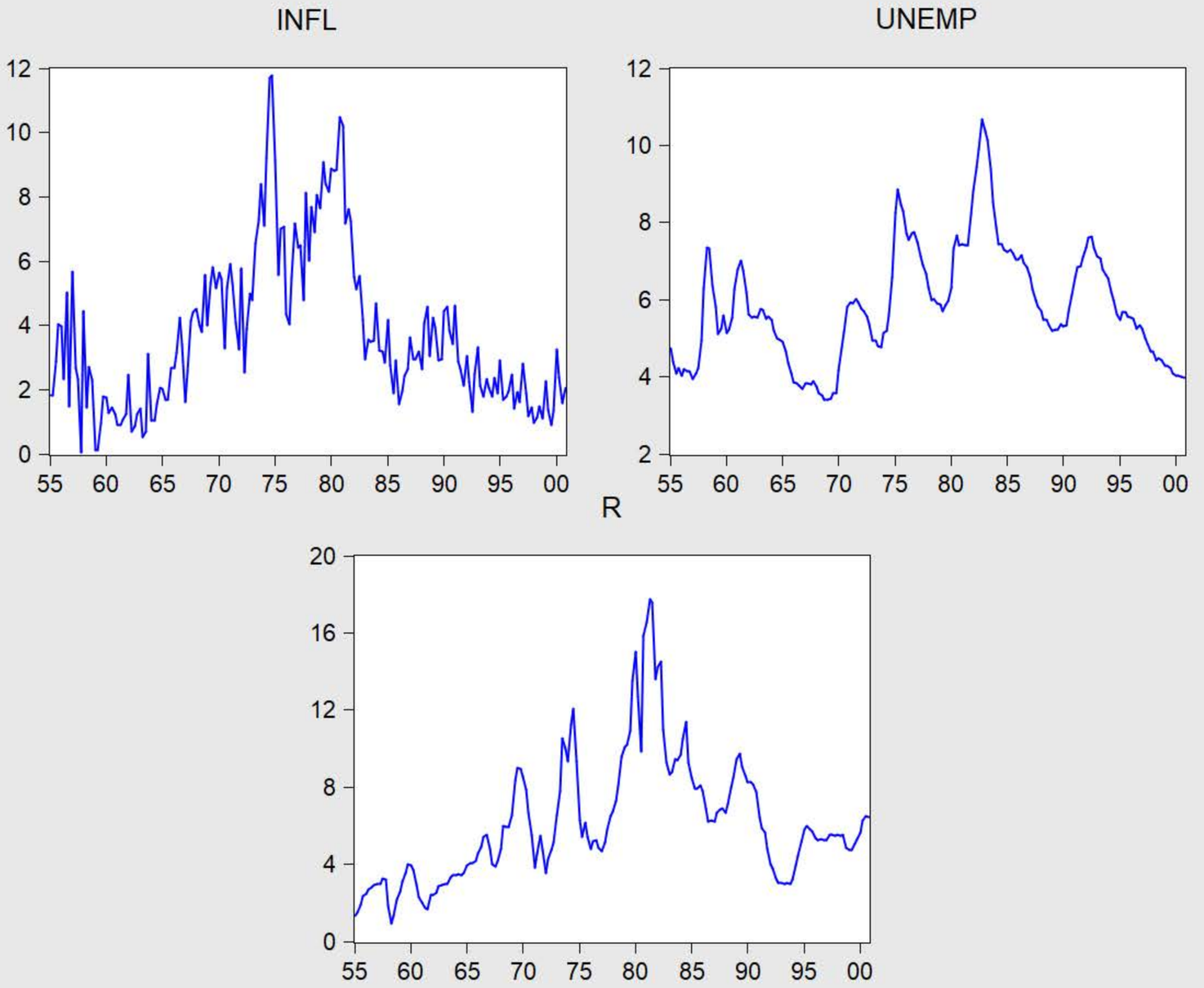
EViews - [Graph: ENDOG Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Options AddText Line/Shade Remove Template Zoom



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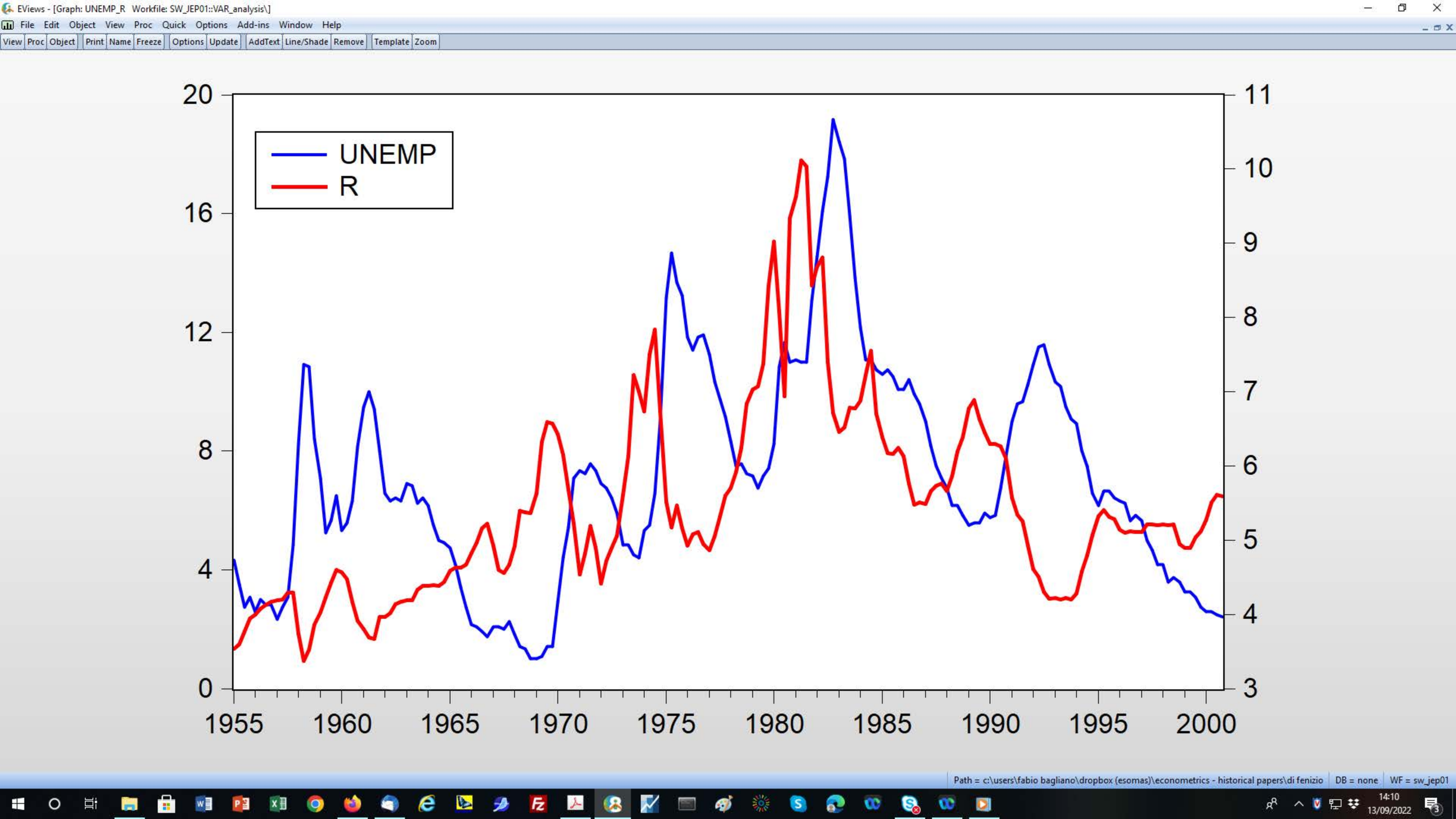
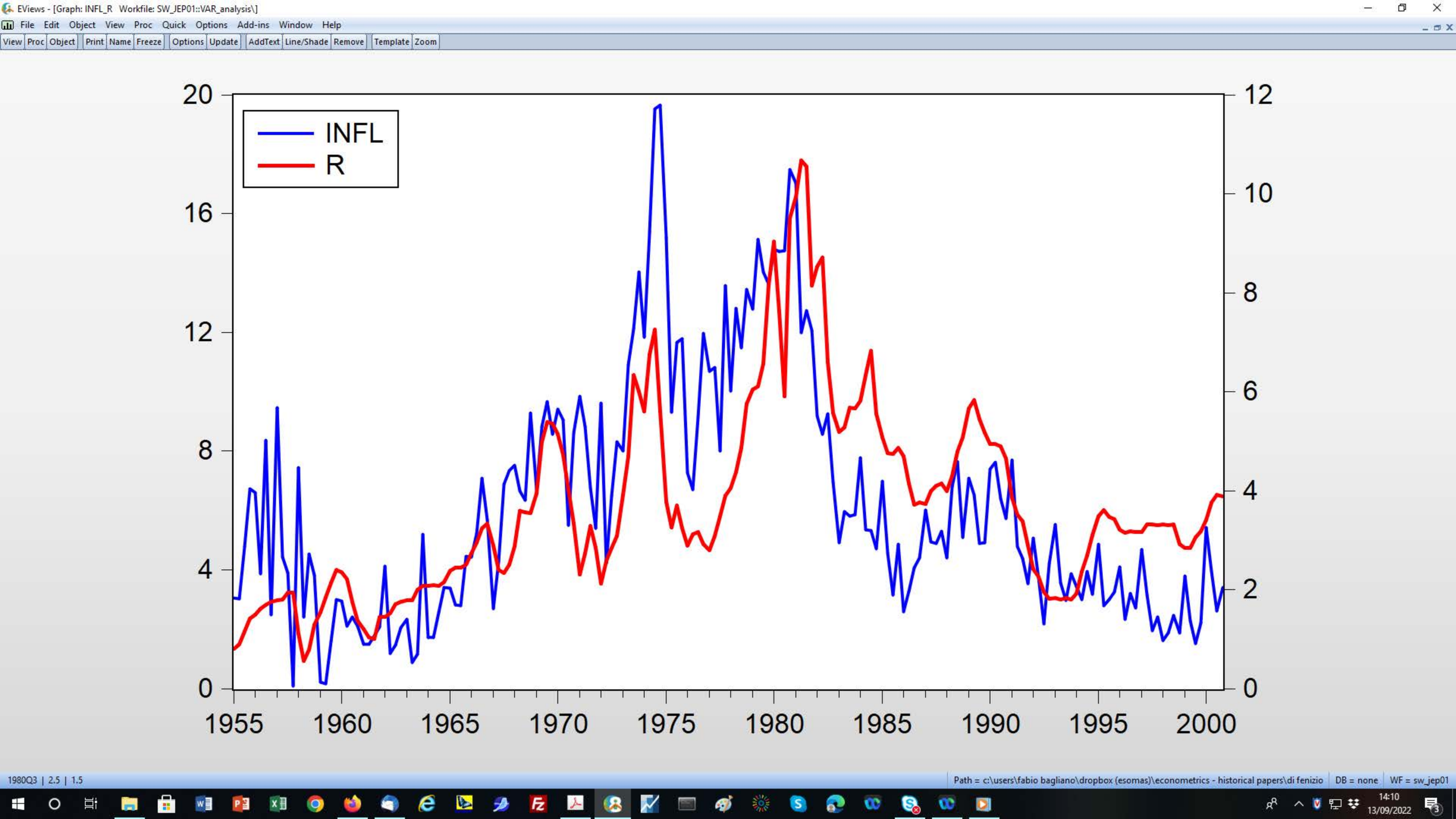

EViews - [Graph: UNEMP_R Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Options Update AddText Line/Shade Remove Template Zoom
UNEMP
R
20
16
12
8
4
0
11
10
9
8
7
6
5
4
3
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio
DB = none
WF = sw_jep01
14:10
13/09/2022


EViews - [Graph: INFL_R Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Options Update AddText Line/Shade Remove Template Zoom
INFL
R
20
16
12
8
4
0
12
10
8
6
4
2
0
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
1980Q3 | 2.5 | 1.5
Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio
DB = none
WF = sw_jep01
14:10
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EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

VAR Specification

Basics

VAR Type

- (•) Unrestricted VAR
- ( ) Vector Error Correction
- ( ) Bayesian VAR

Endogenous Variables: infl unemp r

Estimation Sample: 1960q1 2000q4

Lag Intervals for Endogenous: 1 4

Exogenous Variables: c

OK Annulla

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

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EViews

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Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

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- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

Vector Autoregression Estimates
Date: 09/13/22 Time: 14:35
Sample: 1960Q1 2000Q4
Included observations: 164
Standard errors in ( ) & t-statistics in [ ]

	INFL	UNEMP	R
INFL(-1)	0.546602	0.030733	0.086682
	(0.07866)	(0.01870)	(0.06935)
	[6.94890]	[1.64377]	[1.24984]
INFL(-2)	0.075629	-0.030821	0.193629
	(0.08941)	(0.02125)	(0.07884)
	[0.84583]	[-1.45026]	[2.45610]
INFL(-3)	0.111728	0.029789	-0.078252
	(0.09006)	(0.02141)	(0.07941)
	[1.24052]	[1.39157]	[-0.98541]
INFL(-4)	0.266606	-0.024084	-0.027216
	(0.08228)	(0.01956)	(0.07255)
	[3.24007]	[-1.23145]	[-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

14:36
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *
Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

	[-2.55014]	[0.56274]	[-1.61690]
UNEMP(-4)	0.587782	-0.053440	0.626826
	(0.34458)	(0.08190)	(0.30381)
	[1.70581]	[-0.65250]	[2.06321]
R(-1)	0.227701	-0.003358	0.948524
	(0.10046)	(0.02388)	(0.08858)
	[2.26651]	[-0.14061]	[10.7084]
R(-2)	-0.228725	0.050389	-0.381030
	(0.13458)	(0.03199)	(0.11866)
	[-1.69956]	[1.57529]	[-3.21117]
R(-3)	0.062624	-0.020360	0.332095
	(0.13390)	(0.03183)	(0.11806)
	[0.46768]	[-0.63971]	[2.81287]
R(-4)	-0.069266	0.005464	0.029857
	(0.10242)	(0.02434)	(0.09030)
	[-0.67630]	[0.22444]	[0.33064]
C	1.027154	0.101297	0.505753
	(0.37358)	(0.08880)	(0.32939)
	[2.74946]	[1.14079]	[1.53544]

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

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13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
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- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

VAR Stability Condition Check

Roots of Characteristic Polynomial
Endogenous variables: INFL UNEMP R
Exogenous variables: C
Lag specification: 1 4
Date: 09/13/22 Time: 14:36

Root	Modulus
0.971483 - 0.054282i	0.972998
0.971483 + 0.054282i	0.972998
0.795321 - 0.206719i	0.821747
0.795321 + 0.206719i	0.821747
-0.010101 - 0.674997i	0.675072
-0.010101 + 0.674997i	0.675072
0.091585 - 0.628600i	0.635237
0.091585 + 0.628600i	0.635237
-0.395485	0.395485
-0.296342	0.296342
-0.115289	0.115289
0.090175	0.090175

No root lies outside the unit circle.
VAR satisfies the stability condition.

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

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EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

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- corr_inn
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- fevd_12
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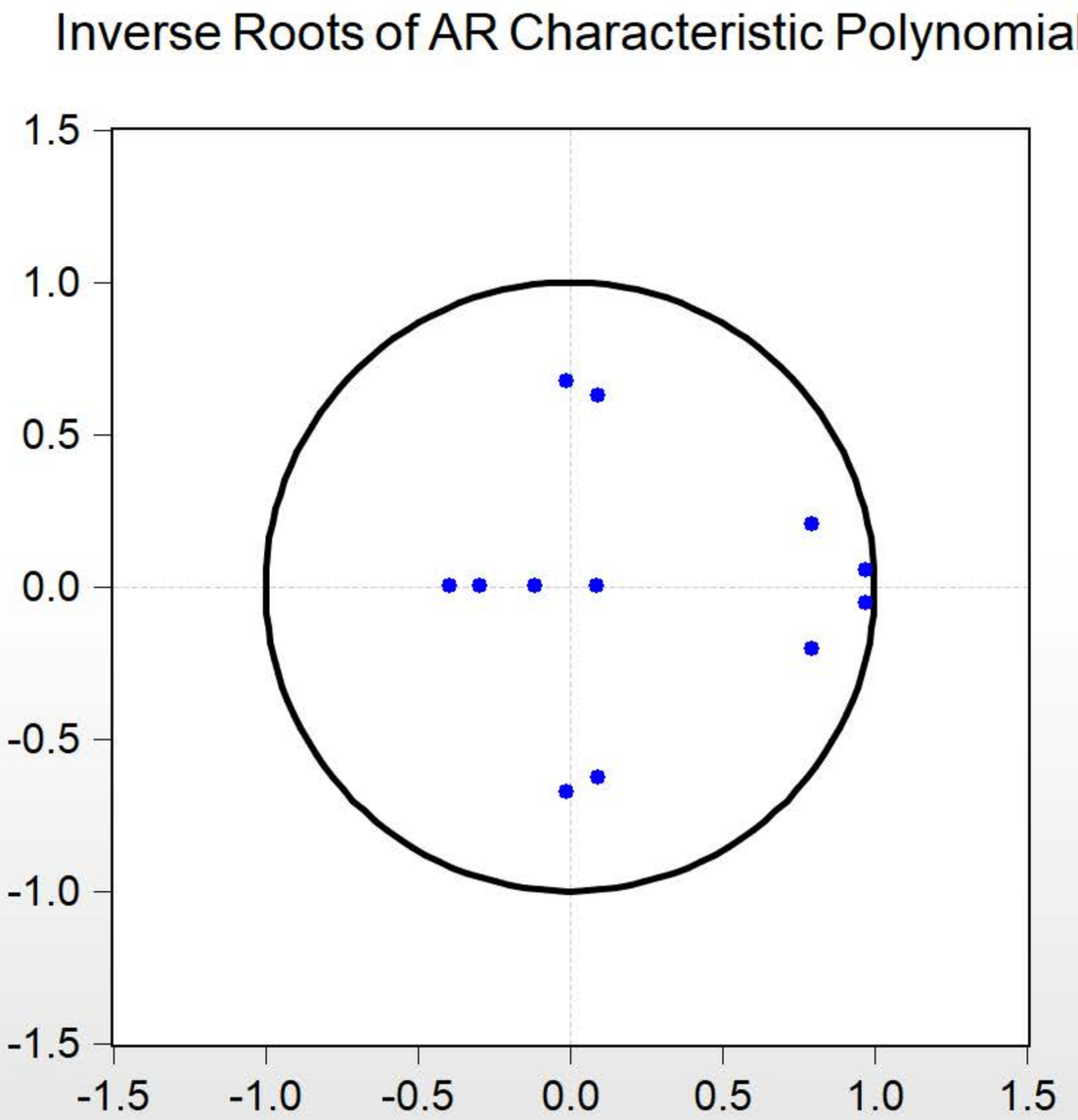
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids



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14:51
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

VAR Residual Serial Correlation L...
Null Hypothesis: no serial correlati...
Date: 09/13/22 Time: 14:40
Sample: 1960Q1 2000Q4
Included observations: 164

Lags	LM-Stat	Prob
1	15.16624	0.0865
2	5.522029	0.7866
3	23.83104	0.0046
4	15.27946	0.0835
5	20.37984	0.0157
6	11.28607	0.2566
7	24.87633	0.0031
8	17.59728	0.0401

Probs from chi-square with 9 df.

0.7866371665986562

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

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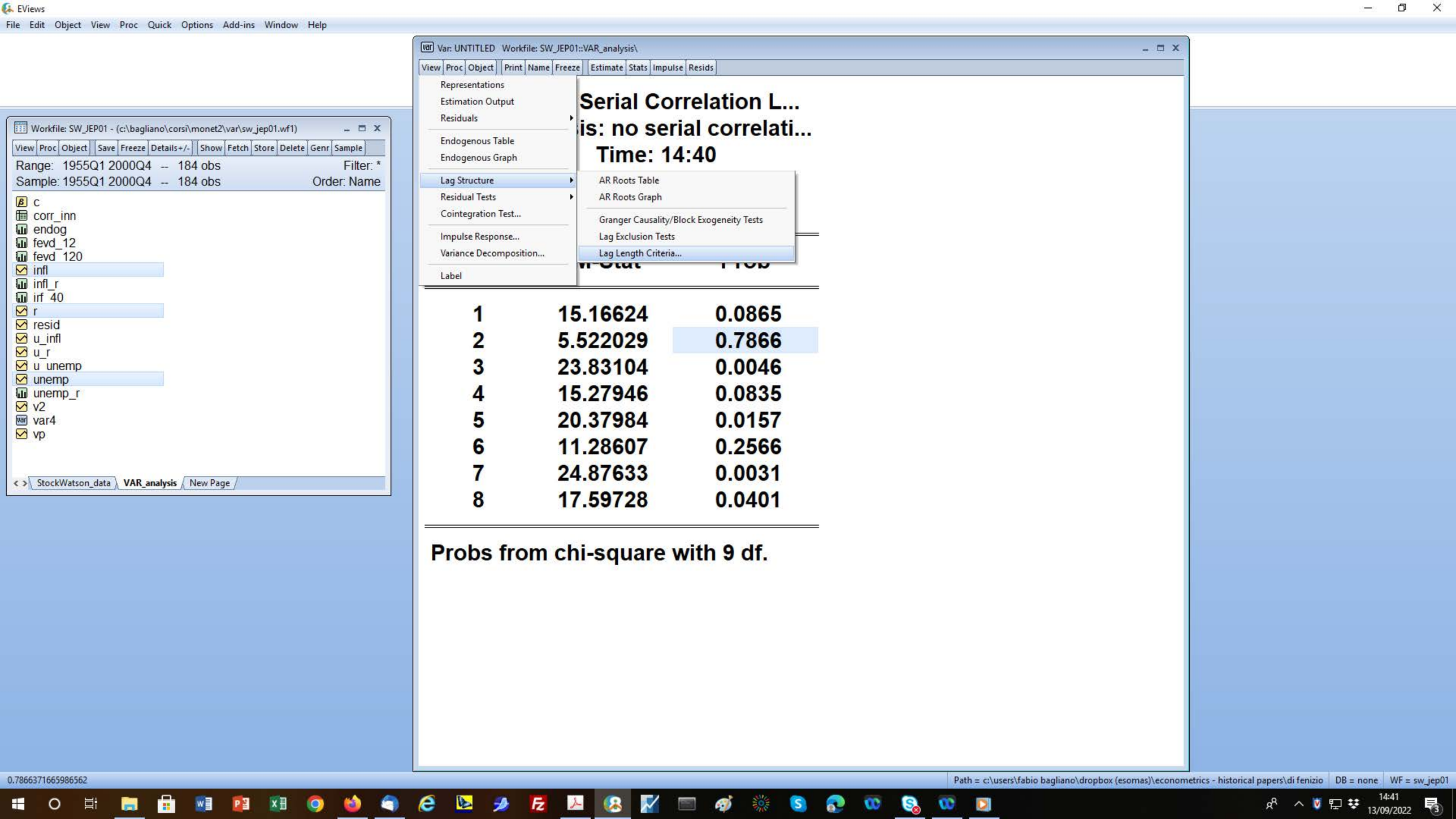
EViews
File Edit Object View Proc Quick Options Add-ins Window Help
Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)
View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample
Range: 1955Q1 2000Q4 -- 184 obs
Filter: *
Sample: 1955Q1 2000Q4 -- 184 obs
Order: Name
c
corr_inn
endog
fevd_12
fevd_120
infl
infl_r
irf_40
r
resid
u_infl
u_r
u_unemp
unemp
unemp_r
v2
var4
vp
StockWatson_data
VAR_analysis
New Page
Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\
View Proc Object Print Name Freeze Estimate Stats Impulse Resids
Representations
Estimation Output
Residuals
Endogenous Table
Endogenous Graph
Lag Structure
Residual Tests
Cointegration Test...
Impulse Response...
Variance Decomposition...
Label
AR Roots Table
AR Roots Graph
Granger Causality/Block Exogeneity Tests
Lag Exclusion Tests
Lag Length Criteria...
Serial Correlation L...
is: no serial correlati...
Time: 14:40
1 15.16624 0.0865
2 5.522029 0.7866
3 23.83104 0.0046
4 15.27946 0.0835
5 20.37984 0.0157
6 11.28607 0.2566
7 24.87633 0.0031
8 17.59728 0.0401
Probs from chi-square with 9 df.
0.7866371665986562
Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio
DB = none
WF = sw_jep01
14:41
13/09/2022

EViews - [Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Estimate Stats Impulse Resids

VAR Lag Order Selection Criteria
Endogenous variables: INFL UNEMP R
Exogenous variables: C
Date: 09/13/22 Time: 14:41
Sample: 1960Q1 2000Q4
Included observations: 164

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1046.961	NA	73.02247	12.80440	12.86110	12.82742
1	-478.0257	1110.117	0.079050	5.975923	6.202742	6.068003
2	-430.6936	90.62371	0.049538	5.508458	5.905392*	5.669598
3	-411.4638	36.11438	0.043741	5.383705	5.950754	5.613906*
4	-400.7679	19.69622	0.042869	5.363023	6.100186	5.662283
5	-395.7882	8.987612	0.045062	5.412052	6.319330	5.780372
6	-378.4345	30.68647*	0.040749*	5.310177*	6.387570	5.747558

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01
14:42
13/09/2022

Table 1

VAR Descriptive Statistics for (π, u, R)

A. Granger-Causality Tests

	Dependent Variable in Regression		
Regressor	π	u	R
π	0.00	0.31	0.00
u	0.02	0.00	0.00
R	0.27	0.01	0.00

EViews

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Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

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- u_r
- u_unemp
- unemp
- unemp_r
- v2
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StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

Representations
Estimation Output
Residuals
Endogenous Table
Endogenous Graph
Lag Structure
Residual Tests
Cointegration Test...
Impulse Response...
Variance Decomposition...
Label

AR Roots Table
AR Roots Graph
Granger Causality/Block Exogeneity Tests
Lag Exclusion Tests
Lag Length Criteria...

egression Estimates

2 Time: 14:35

Q1 2000Q4

in [ ]

	INFL	UNEMP	R
INFL(-1)	0.546602	0.030733	0.086682
	(0.07866)	(0.01870)	(0.06935)
	[6.94890]	[1.64377]	[1.24984]
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	(0.08941)	(0.02125)	(0.07884)
	[0.84583]	[-1.45026]	[2.45610]
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	(0.09006)	(0.02141)	(0.07941)
	[1.24052]	[1.39157]	[-0.98541]
INFL(-4)	0.266606	-0.024084	-0.027216
	(0.08228)	(0.01956)	(0.07255)
	[3.24007]	[-1.23145]	[-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

15:16
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

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- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

VAR Granger Causality/Block Exogeneity Wald Tests

Date: 09/13/22 Time: 15:16
Sample: 1960Q1 2000Q4
Included observations: 164

Dependent variable: INFL

Excluded	Chi-sq	df	Prob.
UNEMP	12.40875	4	0.0146
R	5.271804	4	0.2605
All	33.22024	8	0.0001

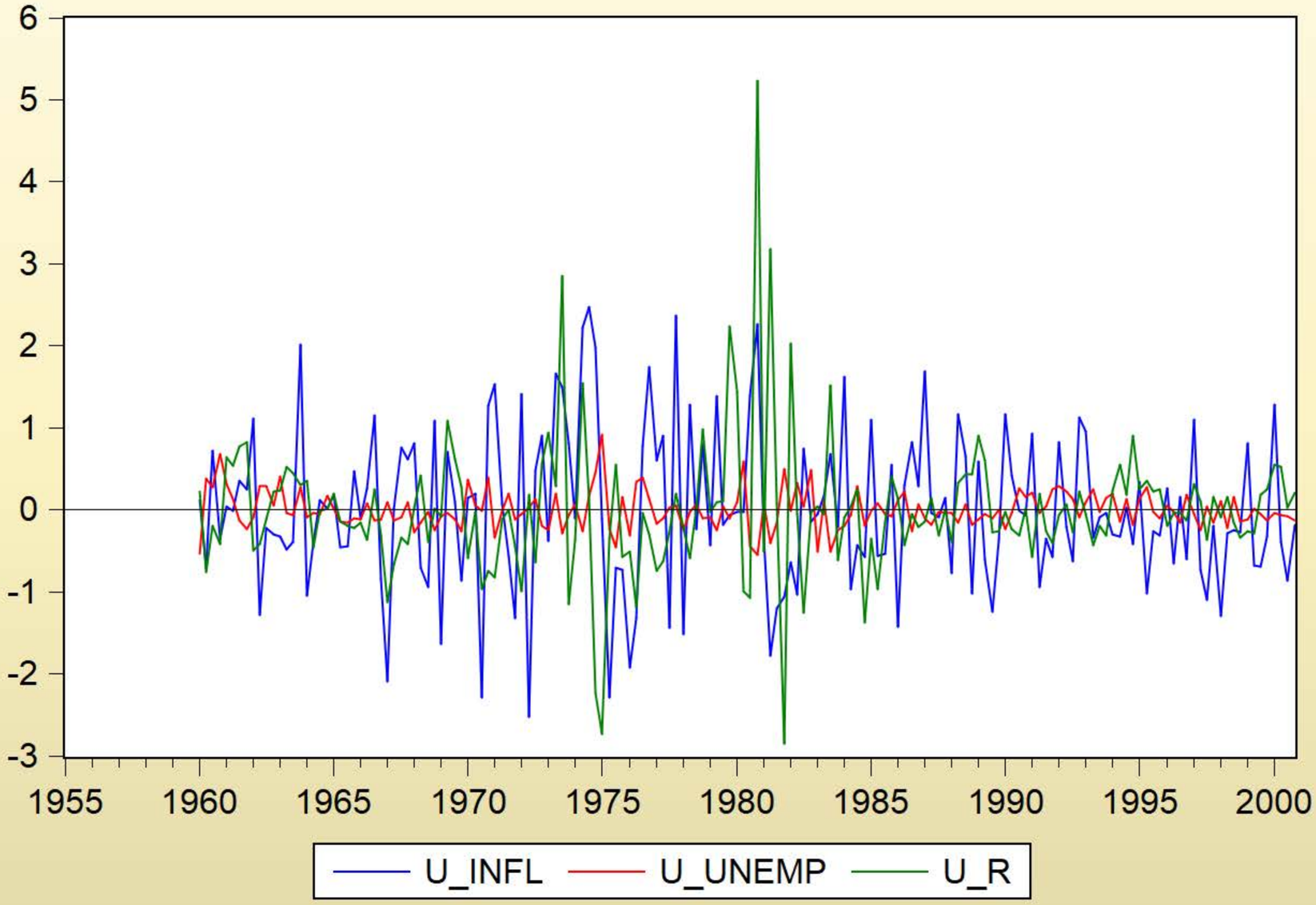
Dependent variable: UNEMP

Excluded	Chi-sq	df	Prob.
INFL	4.937588	4	0.2938
R	14.59963	4	0.0056
All	36.22794	8	0.0000

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

15:16
13/09/2022

EViews - [Group: UNTITLED Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Default Options Position Sample Sheet Stats Spec



1955Q1 2000Q4
Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01
15:33
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete

Range: 1955Q1 2000Q4 -- 184 obs
Sample: 1955Q1 2000Q4 -- 184 obs

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Group: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Sample Sheet Stats Spec

Covariance Analysis: Ordinary
Date: 09/13/22 Time: 15:35
Sample (adjusted): 1960Q1 2000Q4
Included observations: 164 after adjustments

Covariance Correlation t-Statistic	U_INFL	U_UNEMP	U_R
U_INFL	0.915067		
	1.000000		

U_UNEMP	-0.012144	0.051696	
	-0.055836	1.000000	
	-0.711782	-----	
U_R	0.104424	-0.084804	0.711360
	0.129428	-0.442225	1.000000
	1.661322	-6.275599	-----

0.1294279252328501

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

15:37
13/09/2022

Relation between VAR innovations and structural disturbances based on a Choleski (recursive) identification scheme:

$$\begin{pmatrix} 1 & 0 & 0 \\ a_{21} & 1 & 0 \\ a_{31} & a_{32} & 1 \end{pmatrix} \begin{pmatrix} u_t^{\pi} \\ u_t^{U} \\ u_t^{R} \end{pmatrix} = \begin{pmatrix} v_t^{1} \\ v_t^{2} \\ v_t^{P} \end{pmatrix}$$

$$\begin{aligned} & u_t^{\pi} = v_t^{1} \\ \Rightarrow \quad & u_t^{U} = -a_{21} u_t^{\pi} + v_t^{2} \\ & u_t^{R} = -a_{31} u_t^{\pi} - a_{32} u_t^{U} + v_t^{P} \end{aligned}$$

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object | Save Freeze Details+/- | Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | **VAR_analysis** | New Page

Equation Estimation

Specification | Options

Equation specification

Dependent variable followed by list of regressors including ARMA and PDL terms, OR an explicit equation like Y=c(1)+c(2)*X.

u_unemp c u_infl

Estimation settings

Method: LS - Least Squares (NLS and ARMA)

Sample: 1960Q1 2000Q4

OK Annulla

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

16:15
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Equation: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Forecast Stats Resids

Dependent Variable: U_UNEMP
Method: Least Squares
Date: 09/13/22 Time: 16:15
Sample: 1960Q1 2000Q4
Included observations: 164

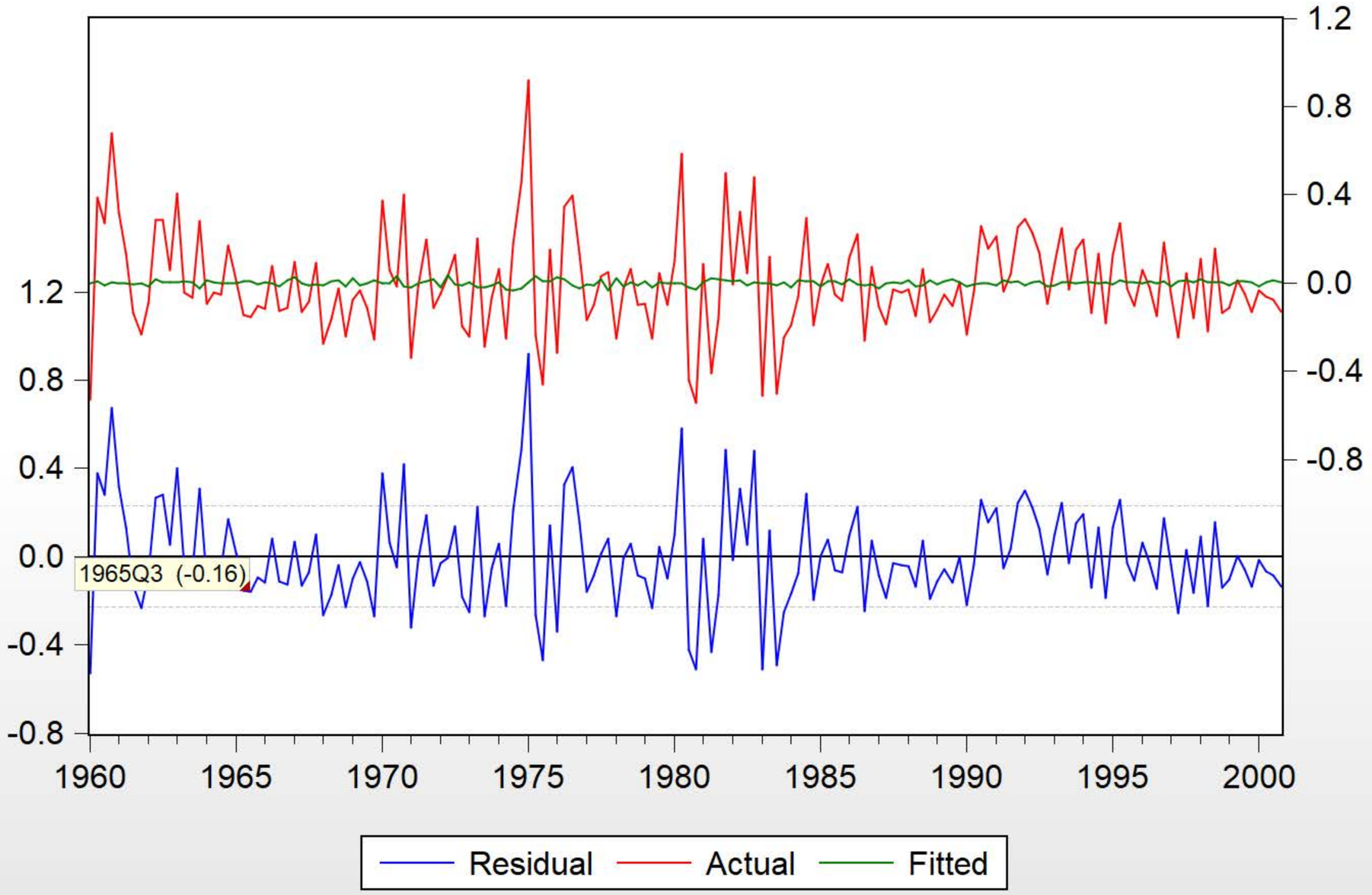
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.10E-15	0.017836	-6.14E-14	1.0000
U_INFL	-0.013271	0.018645	-0.711782	0.4776

R-squared	0.003118	Mean dependent var	-1.10E-15
Adjusted R-squared	-0.003036	S.D. dependent var	0.228064
S.E. of regression	0.228410	Akaike info criterion	-0.103229
Sum squared resid	8.451722	Schwarz criterion	-0.065426
Log likelihood	10.46477	Hannan-Quinn criter.	-0.087882
F-statistic	0.506634	Durbin-Watson stat	1.898031
Prob(F-statistic)	0.477623		

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:15
13/09/2022

EViews - [Equation: UNTITLED Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Estimate Forecast Stats Resids



1966Q1 | -0.37 | -1.61
Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01
16:16
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | **VAR_analysis** | New Page

Equation Estimation

Specification Options

Equation specification

Dependent variable followed by list of regressors including ARMA and PDL terms, OR an explicit equation like Y=c(1)+c(2)*X.

u_r c u_infl u_unemp

Estimation settings

Method: LS - Least Squares (NLS and ARMA)

Sample: 1960Q1 2000Q4

OK Annulla

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:17
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Equation: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Forecast Stats Resids

Dependent Variable: U_R
Method: Least Squares
Date: 09/13/22 Time: 16:17
Sample: 1960Q1 2000Q4
Included observations: 164

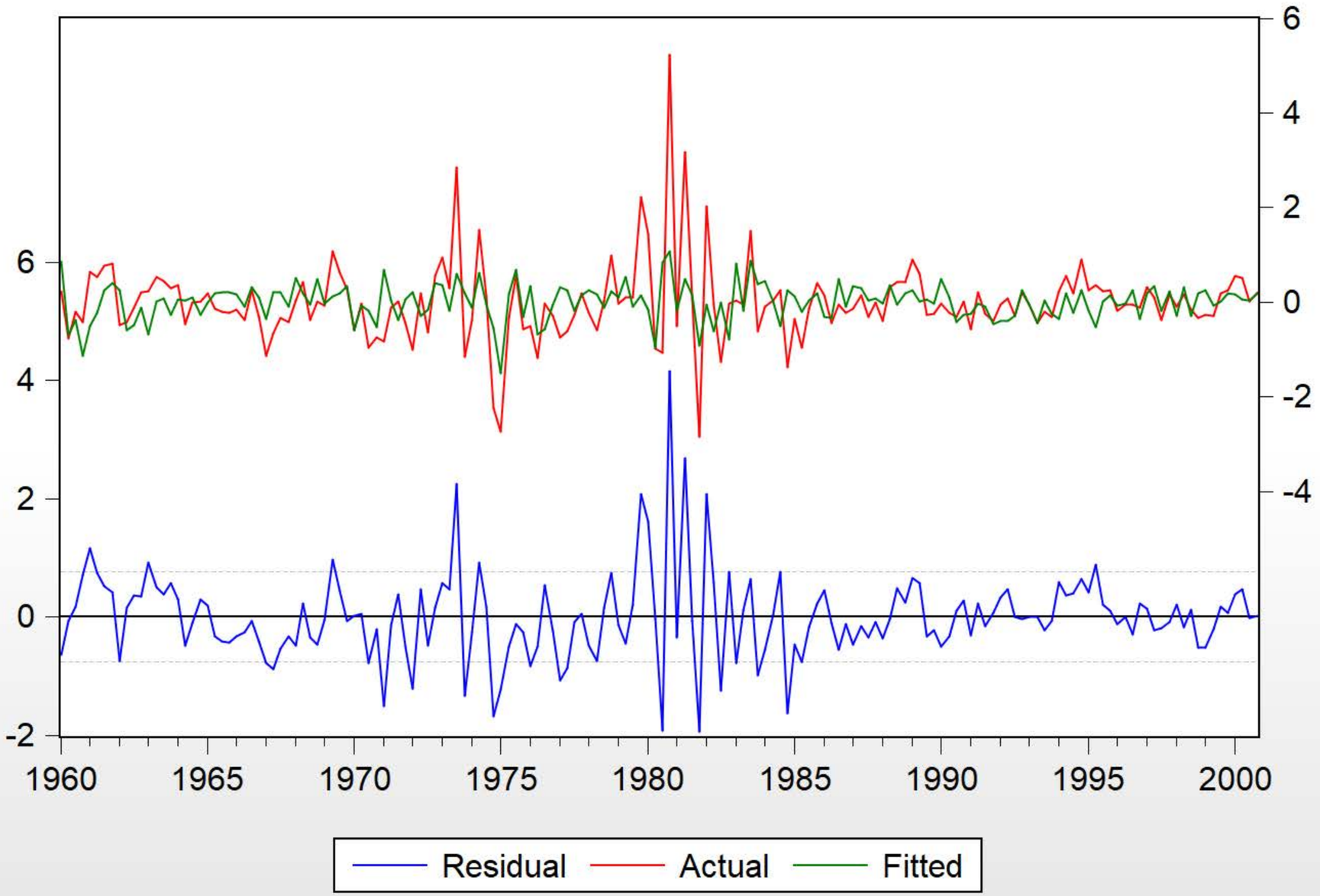
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.69E-15	0.059209	4.54E-14	1.0000
U_INFL	0.092634	0.061992	1.494279	0.1371
U_UNEMP	-1.618676	0.260817	-6.206172	0.0000

R-squared	0.206567	Mean dependent var	4.52E-15
Adjusted R-squared	0.196711	S.D. dependent var	0.846005
S.E. of regression	0.758243	Akaike info criterion	2.302499
Sum squared resid	92.56423	Schwarz criterion	2.359204
Log likelihood	-185.8049	Hannan-Quinn criter.	2.325519
F-statistic	20.95786	Durbin-Watson stat	1.984411
Prob(F-statistic)	0.000000		

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:18 13/09/2022

EViews - [Equation: UNTITLED Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Estimate Forecast Stats Resids



Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01
16:20
13/09/2022

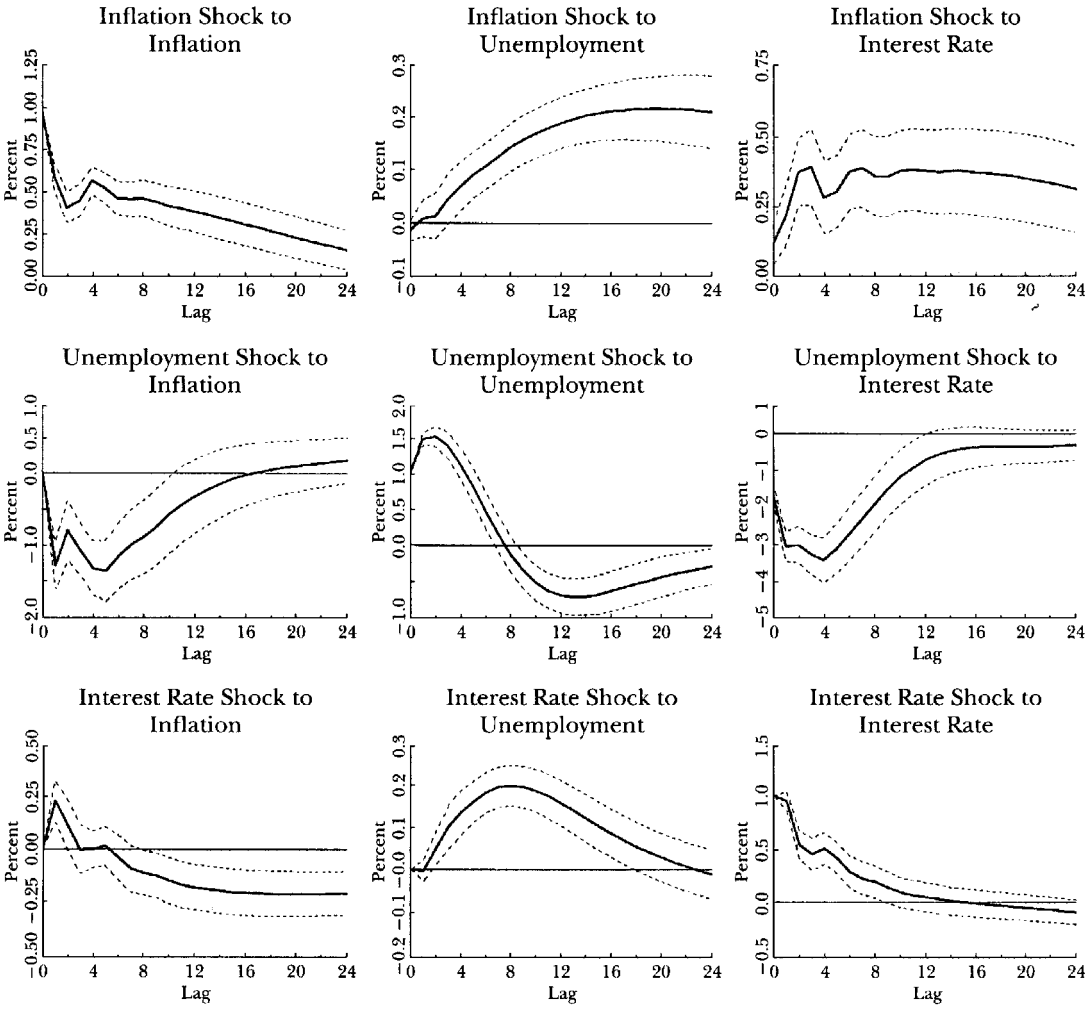
$$
\begin{aligned}
& u_t^{\pi} = v_t^1 \\
\Rightarrow \quad & u_t^{U} = -a_{21} u_t^{\pi} + v_t^2 \\
& u_t^{R} = -a_{31} u_t^{\pi} - a_{32} u_t^{U} + v_t^P
\end{aligned}
$$

Inverting $\mathbf{A}$:

$$
\begin{aligned}
u_t^{\pi} &= v_t^1 \\
u_t^{U} &= -a_{21} v_t^1 + v_t^2 \\
u_t^{R} &= -(a_{31} - a_{32} a_{21})\, v_t^1 - a_{32}\, v_t^2 + v_t^P
\end{aligned}
$$

Figure 1

Impulse Responses in the Inflation-Unemployment-Interest Rate Recursive VAR



EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

- Representations
- Estimation Output
- Residuals
- Endogenous Table
- Endogenous Graph
- Lag Structure
- Residual Tests
- Cointegration Test...
- Impulse Response...
- Variance Decomposition...
- Label

Vector Autoregression Estimates

egression Estimates
2 Time: 16:26
Q1 2000Q4
ervations: 164
rs in ( ) & t-statistics in [ ]

	INFL	UNEMP	R
INFL(-1)	0.546602	0.030733	0.086682
	(0.07866)	(0.01870)	(0.06935)
	[6.94890]	[1.64377]	[1.24984]
INFL(-2)	0.075629	-0.030821	0.193629
	(0.08941)	(0.02125)	(0.07884)
	[0.84583]	[-1.45026]	[2.45610]
INFL(-3)	0.111728	0.029789	-0.078252
	(0.09006)	(0.02141)	(0.07941)
	[1.24052]	[1.39157]	[-0.98541]
INFL(-4)	0.266606	-0.024084	-0.027216
	(0.08228)	(0.01956)	(0.07255)
	[3.24007]	[-1.23145]	[-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

16:26
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *
Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

Vector Autoregression Estimates
Date: 09/13/22 Time: 16:26
Sample: 1960Q1 2000Q4
Included observations: 164
Standard errors in ( ) & t-statistics in [ ]

	INFL	UNEMP	R
INFL(-1)			0.086682 (0.06935) [1.24984]
INFL(-2)			0.193629 (0.07884) [2.45610]
INFL(-3)	0.111728 (0.09006) [1.24052]	0.029789 (0.02141) [1.39157]	-0.078252 (0.07941) [-0.98541]
INFL(-4)	0.266606 (0.08228) [3.24007]	-0.024084 (0.01956) [-1.23145]	-0.027216 (0.07255) [-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Impulse Responses

Display | Impulse Definition

Display Format
- Table
- Multiple Graphs
- Combined Graphs

Response Standard Errors
- None
- Analytic (asymptotic)
- Monte Carlo

Repetitions: 100

Display Information

Impulses: infl unemp r

Responses: infl unemp r

Periods: 40

Accumulated Responses

OK Annulla

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:27 13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *
Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

Vector Autoregression Estimates
Date: 09/13/22 Time: 16:26
Sample: 1960Q1 2000Q4
Included observations: 164
Standard errors in ( ) & t-statistics in [ ]

			R
INFL(-1)			0.086682 (0.06935) [1.24984]
INFL(-2)			0.193629 (0.07884) [2.45610]
INFL(-3)	0.111728 (0.09006) [1.24052]	0.029789 (0.02141) [1.39157]	-0.078252 (0.07941) [-0.98541]
INFL(-4)	0.266606 (0.08228) [3.24007]	-0.024084 (0.01956) [-1.23145]	-0.027216 (0.07255) [-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Impulse Responses

Display | Impulse Definition

Decomposition Method:
- Residual - one unit
- Residual - one std.deviation
- Cholesky - dof adjusted
- Cholesky - no dof adjustment
- Generalized Impulses
- Structural Decomposition
- User Specified

Cholesky Ordering: infl unemp r

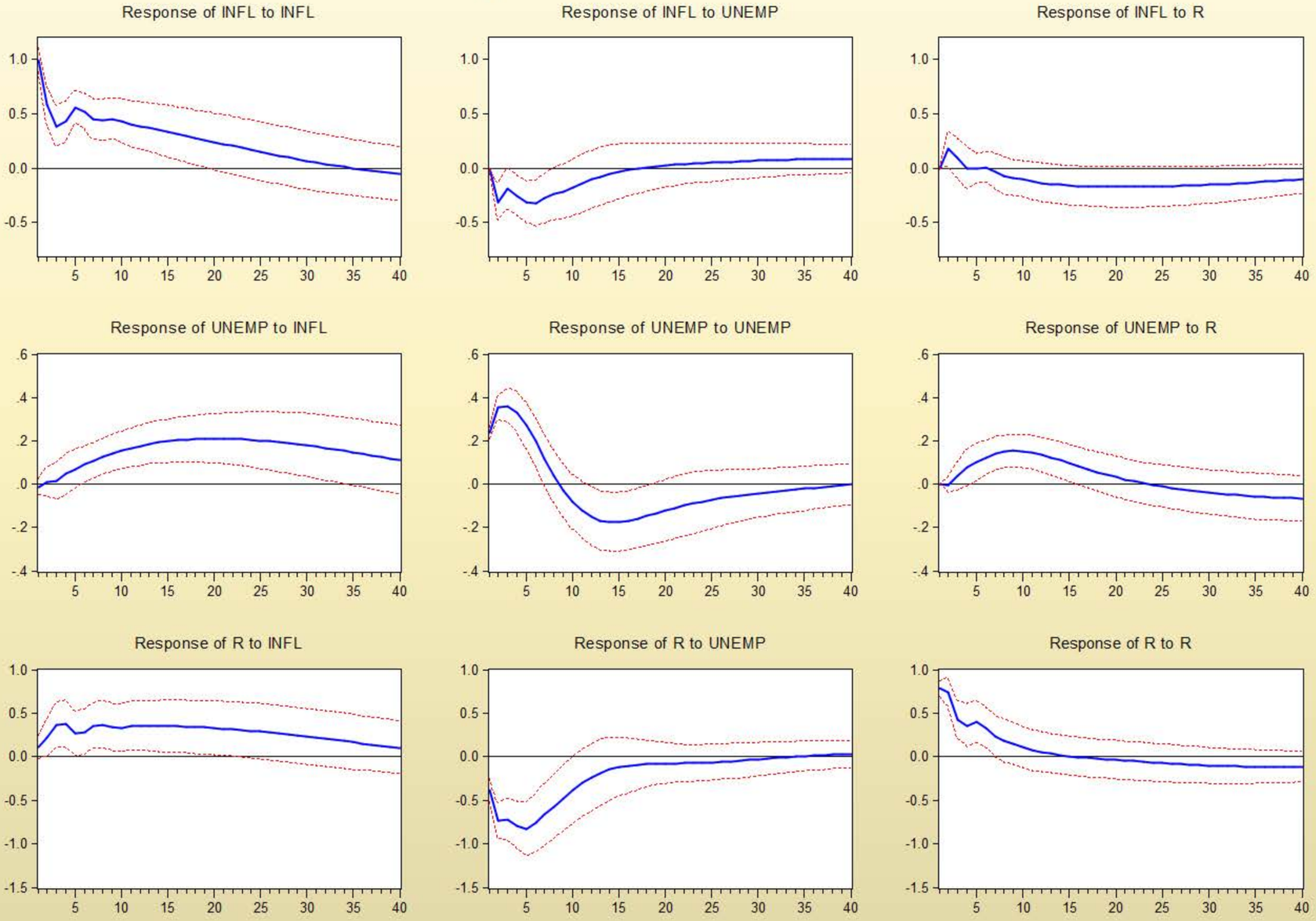
OK Annulla

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:27
13/09/2022

EViews - [Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Estimate Stats Impulse Resids

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



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16:32
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *

Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

- Representations
- Estimation Output
- Residuals
- Endogenous Table
- Endogenous Graph
- Lag Structure
- Residual Tests
- Cointegration Test...
- Impulse Response...
- Variance Decomposition...
- Label

Vector Autoregression Estimates

egression Estimates
2 Time: 16:26
Q1 2000Q4
ervations: 164
rs in ( ) & t-statistics in [ ]

	INFL	UNEMP	R
INFL(-1)	0.546602	0.030733	0.086682
	(0.07866)	(0.01870)	(0.06935)
	[6.94890]	[1.64377]	[1.24984]
INFL(-2)	0.075629	-0.030821	0.193629
	(0.08941)	(0.02125)	(0.07884)
	[0.84583]	[-1.45026]	[2.45610]
INFL(-3)	0.111728	0.029789	-0.078252
	(0.09006)	(0.02141)	(0.07941)
	[1.24052]	[1.39157]	[-0.98541]
INFL(-4)	0.266606	-0.024084	-0.027216
	(0.08228)	(0.01956)	(0.07255)
	[3.24007]	[-1.23145]	[-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio | DB = none | WF = sw_jep01

16:39
13/09/2022

EViews

File Edit Object View Proc Quick Options Add-ins Window Help

Workfile: SW_JEP01 - (c:\bagliano\corsi\monet2\var\sw_jep01.wf1)

View Proc Object Save Freeze Details+/- Show Fetch Store Delete Genr Sample

Range: 1955Q1 2000Q4 -- 184 obs Filter: *
Sample: 1955Q1 2000Q4 -- 184 obs Order: Name

- c
- corr_inn
- endog
- fevd_12
- fevd_120
- infl
- infl_r
- irf_40
- r
- resid
- u_infl
- u_r
- u_unemp
- unemp
- unemp_r
- v2
- var4
- vp

StockWatson_data | VAR_analysis | New Page

Var: UNTITLED Workfile: SW_JEP01::VAR_analysis\

View Proc Object Print Name Freeze Estimate Stats Impulse Resids

Vector Autoregression Estimates

Vector Autoregression Estimates
Date: 09/13/22 Time: 16:26
Sample: 1960Q1 2000Q4
Included observations: 164
Standard errors in ( ) & t-statistics in [ ]

VAR Variance Decompositions

Display Format
- Table
- Multiple Graphs
- Combined Graphs

Display Informaton
Decompositions of: infl unemp r
Periods: 12

Standard Errors
- None
- Monte Carlo

Repetitions for Monte Carlo: 100

Factorization
- Cholesky Decomposition
- Structural Decomposition

Ordering for Cholesky: infl unemp r

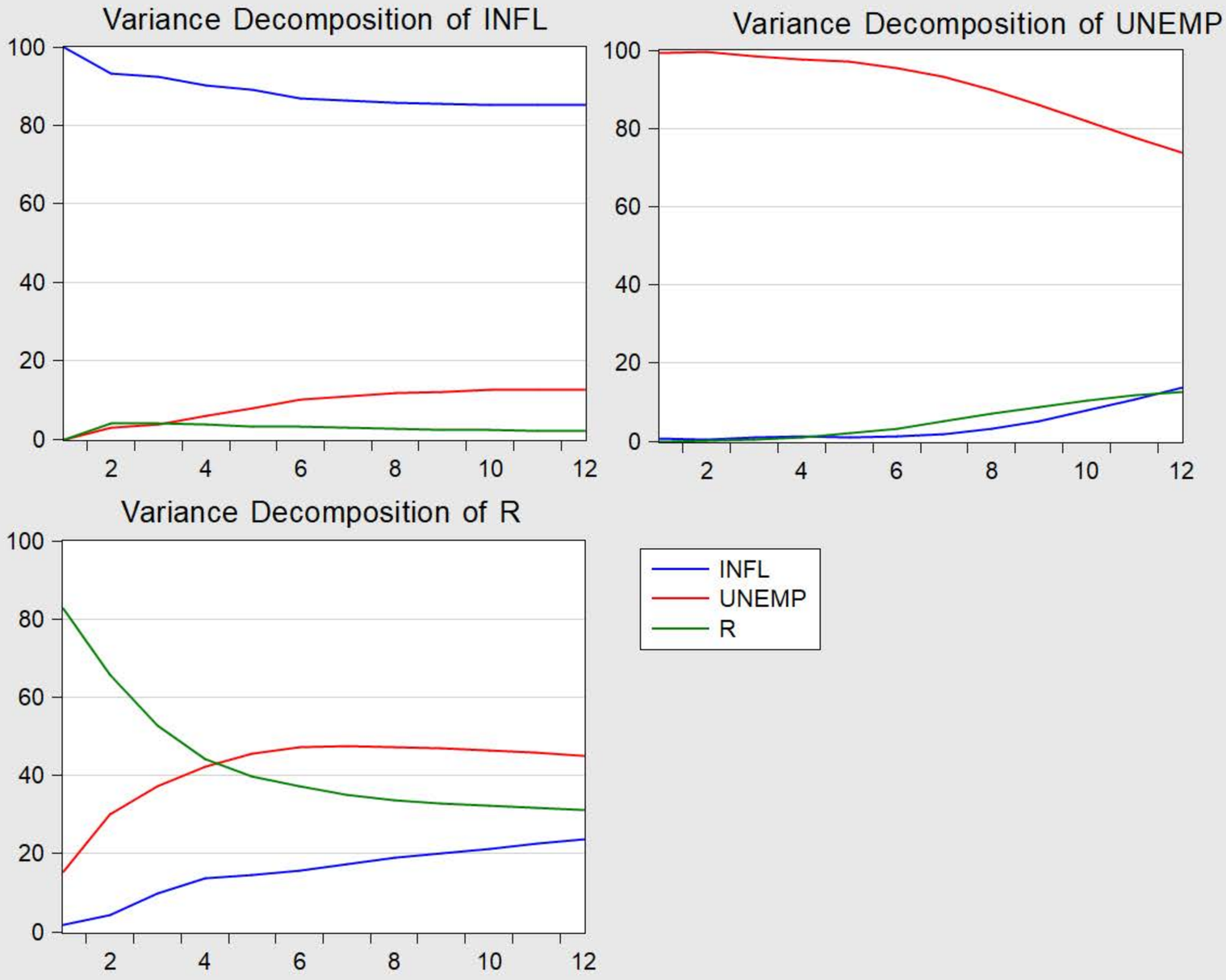
OK Cancel

		UNEMP	R
INFL		0.030733	0.086682
		(0.01870)	(0.06935)
		[1.64377]	[1.24984]
INFL		-0.030821	0.193629
		(0.02125)	(0.07884)
		[-1.45026]	[2.45610]
INFL(-3)	0.111728	0.029789	-0.078252
	(0.09006)	(0.02141)	(0.07941)
	[1.24052]	[1.39157]	[-0.98541]
INFL(-4)	0.266606	-0.024084	-0.027216
	(0.08228)	(0.01956)	(0.07255)
	[3.24007]	[-1.23145]	[-0.37514]
UNEMP(-1)	-0.938366	1.484507	-1.565494

Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01

16:41 13/09/2022

EViews - [Graph: FEVD_12 Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Options AddText Line/Shade Remove Template Zoom



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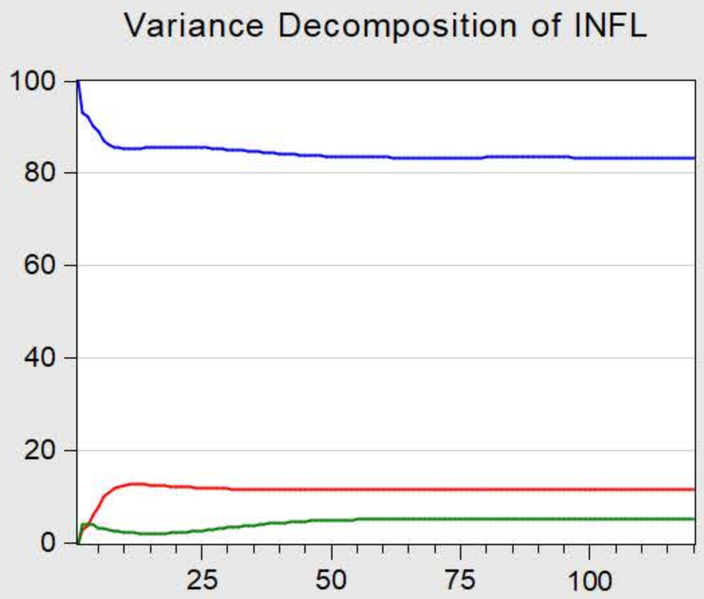
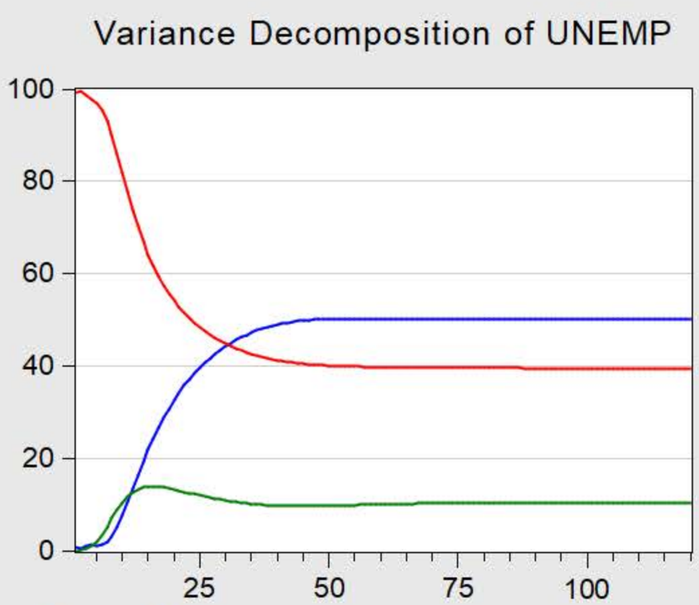
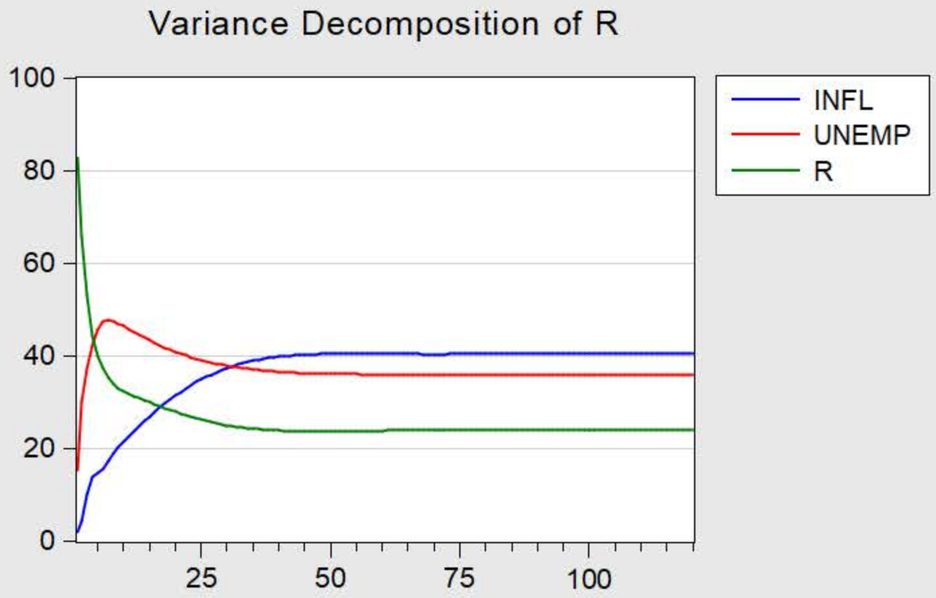
16:41
13/09/2022

EViews - [Graph: FEVD_120 Workfile: SW_JEP01::VAR_analysis\]
File Edit Object View Proc Quick Options Add-ins Window Help
View Proc Object Print Name Freeze Options AddText Line/Shade Remove Template Zoom







Path = c:\users\fabio bagliano\dropbox (esomas)\econometrics - historical papers\di fenizio DB = none WF = sw_jep01
16:42
13/09/2022

B. Variance Decompositions from the Recursive VAR Ordered as π, u, R

B.i. Variance Decomposition of π

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.96	100	0	0
4	1.34	88	10	2
8	1.75	82	17	1
12	1.97	82	16	2

B.ii. Variance Decomposition of u

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.23	1	99	0
4	0.64	0	98	2
8	0.79	7	82	11
12	0.92	16	66	18

B.iii. Variance Decomposition of R

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.85	2	19	79
4	1.84	9	50	41
8	2.44	12	60	28
12	2.63	16	59	25

B. Variance Decompositions from the Recursive VAR Ordered as π, u, R

B.i. Variance Decomposition of π

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.96	100	0	0
4	1.34	88	10	2
8	1.75	82	17	1
12	1.97	82	16	2

B. Variance Decompositions from the Recursive VAR Ordered as π, u, R

B.i. Variance Decomposition of π

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.96	100	0	0
4	1.34	88	10	2
8	1.75	82	17	1
12	1.97	82	16	2

B.ii. Variance Decomposition of u

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.23	1	99	0
4	0.64	0	98	2
8	0.79	7	82	11
12	0.92	16	66	18

B.iii. Variance Decomposition of R

Forecast Horizon	*Forecast Standard Error*	*Variance Decomposition (Percentage Points)*		
		π	u	R
1	0.85	2	19	79
4	1.84	9	50	41
8	2.44	12	60	28
12	2.63	16	59	25