```
1 . varbasic RarePrice RareProduction  REA1, lags(1/2) step(8) irf
```

Vector autoregression

Sample: **1970 - 2019** Number of obs = **50**
Log likelihood = **77.07347** AIC = **-2.242939**
FPE = **.0000214** HQIC = **-1.937133**
Det(Sigma_ml) = **9.20e-06** SBIC = **-1.439889**

Equation	Parms	RMSE	R-sq	chi2	P>chi2
RarePrice	**7**	**.203998**	**0.2054**	**12.92648**	**0.0442**
RareProduction	**7**	**.049966**	**0.3342**	**25.10288**	**0.0003**
REA1	**7**	**.376431**	**0.4930**	**48.61953**	**0.0000**

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
RarePrice						
RarePrice						
L1.	**-.1851074**	**.1399667**	**-1.32**	**0.186**	**-.459437**	**.0892222**
L2.	**-.151043**	**.1327264**	**-1.14**	**0.255**	**-.4111819**	**.1090958**
RareProduction						
L1.	**-1.099868**	**.492721**	**-2.23**	**0.026**	**-2.065583**	**-.1341522**
L2.	**.4913093**	**.5278916**	**0.93**	**0.352**	**-.5433391**	**1.525958**
REA1						
L1.	**.0193838**	**.0732901**	**0.26**	**0.791**	**-.1242622**	**.1630298**
L2.	**.0834829**	**.0747177**	**1.12**	**0.264**	**-.0629611**	**.2299269**
_cons	**.0456845**	**.0319127**	**1.43**	**0.152**	**-.0168634**	**.1082323**
RareProduction						
RarePrice						
L1.	**.0143246**	**.0342827**	**0.42**	**0.676**	**-.0528683**	**.0815175**
L2.	**-.0037957**	**.0325093**	**-0.12**	**0.907**	**-.0675128**	**.0599214**
RareProduction						
L1.	**-.0364317**	**.1206846**	**-0.30**	**0.763**	**-.2729692**	**.2001057**
L2.	**-.37659**	**.1292991**	**-2.91**	**0.004**	**-.6300115**	**-.1231684**
REA1						
L1.	**.0303275**	**.0179513**	**1.69**	**0.091**	**-.0048564**	**.0655114**
L2.	**-.0732706**	**.018301**	**-4.00**	**0.000**	**-.1091399**	**-.0374014**
_cons	**.0295097**	**.0078165**	**3.78**	**0.000**	**.0141896**	**.0448298**
REA1						
RarePrice						
L1.	**-.0059702**	**.2582768**	**-0.02**	**0.982**	**-.5121833**	**.5002429**
L2.	**.5199486**	**.2449164**	**2.12**	**0.034**	**.0399212**	**.999976**
RareProduction						
L1.	**1.030903**	**.909205**	**1.13**	**0.257**	**-.7511057**	**2.812913**
L2.	**.391413**	**.9741043**	**0.40**	**0.688**	**-1.517796**	**2.300622**
REA1						
L1.	**.7656831**	**.1352403**	**5.66**	**0.000**	**.500617**	**1.030749**
L2.	**-.1720763**	**.1378746**	**-1.25**	**0.212**	**-.4423055**	**.0981528**
_cons	**-.0424623**	**.0588877**	**-0.72**	**0.471**	**-.1578802**	**.0729555**

```
2 . varstable
```

Eigenvalue stability condition

Eigenvalue	Modulus
.1482841 + .6060266*i*	.623904
.1482841 - .6060266*i*	.623904
-.2557742 + .4883768*i*	.551301
-.2557742 - .4883768*i*	.551301
.4098917	.409892
.3492326	.349233

All the eigenvalues lie inside the unit circle.
VAR satisfies stability condition.

```
3 . predict error33, resid
  (5 missing values generated)

4 . summarize error33
```

Variable	Obs	Mean	Std. Dev.	Min	Max
error33	50	2.14e-10	.1911003	-.39514	.5868568

```
5 . tsline error33, yline(2.14e-10)

6 . varlmar
```

Lagrange-multiplier test

lag	chi2	df	Prob > chi2
1	8.8846	9	0.44800
2	13.9454	9	0.12428

H0: no autocorrelation at lag order

```
7 . vargranger
```

Granger causality Wald tests

Equation	Excluded	chi2	df	Prob > chi2
RarePrice	RareProduction	6.1054	2	0.047
RarePrice	REA1	2.9679	2	0.227
RarePrice	ALL	10.471	4	0.033
RareProduction	RarePrice	.21198	2	0.899
RareProduction	REA1	17.514	2	0.000
RareProduction	ALL	17.94	4	0.001
REA1	RarePrice	4.6696	2	0.097
REA1	RareProduction	1.3997	2	0.497
REA1	ALL	6.4613	4	0.167

```
8 . irf table fevd, impulse( RarePrice RareProduction REA1 ) response( RarePrice RareProduction REA1 ) noc
```

Results from varbasic

step	(1) fevd	(2) fevd	(3) fevd	(4) fevd	(5) fevd	(6) fevd	(7) fevd	(8) fevd
0	0	0	0	0	0	0	0	0
1	1	.016332	.001477	0	.983668	5.4e-06	0	0
2	.933597	.020313	.000968	.065236	.930449	.01119	.001167	.049238
3	.897754	.016147	.043592	.090148	.83459	.021275	.012098	.149262
4	.846058	.014992	.058508	.096932	.750021	.021173	.05701	.234987
5	.839427	.023184	.059636	.100051	.74354	.021328	.060522	.233276
6	.837002	.028599	.059657	.100048	.738	.021857	.062951	.233401
7	.836652	.028935	.059602	.100251	.737742	.021904	.063097	.233323
8	.836344	.029349	.059614	.100202	.737171	.021906	.063454	.23348

step	(9) fevd
0	**0**
1	**.998518**
2	**.987842**
3	**.935133**
4	**.920318**
5	**.919036**
6	**.918486**
7	**.918494**
8	**.918479**

(1) irfname = varbasic, impulse = RarePrice, and response = RarePrice
(2) irfname = varbasic, impulse = RarePrice, and response = RareProduction
(3) irfname = varbasic, impulse = RarePrice, and response = REA1
(4) irfname = varbasic, impulse = RareProduction, and response = RarePrice
(5) irfname = varbasic, impulse = RareProduction, and response = RareProduction
(6) irfname = varbasic, impulse = RareProduction, and response = REA1
(7) irfname = varbasic, impulse = REA1, and response = RarePrice
(8) irfname = varbasic, impulse = REA1, and response = RareProduction
(9) irfname = varbasic, impulse = REA1, and response = REA1

9 .