

UW

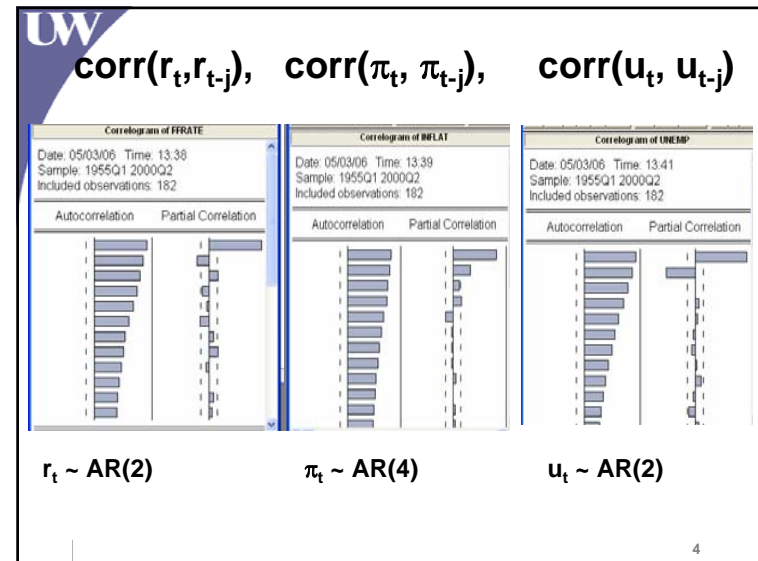
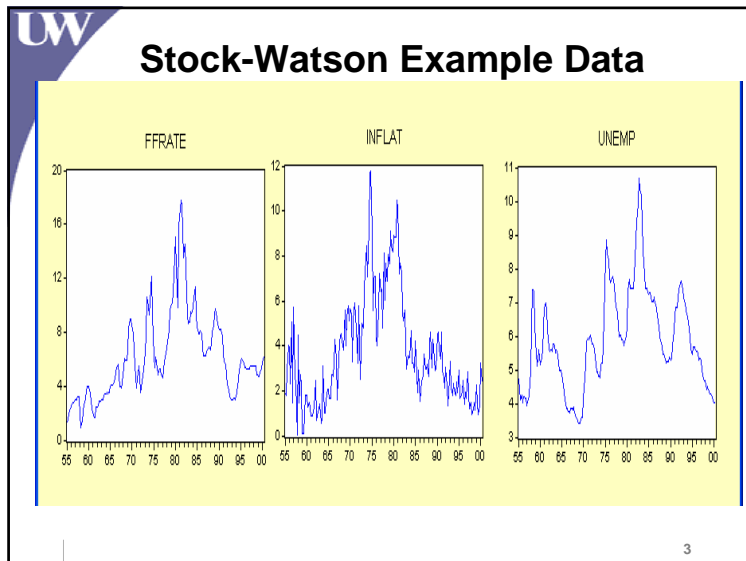
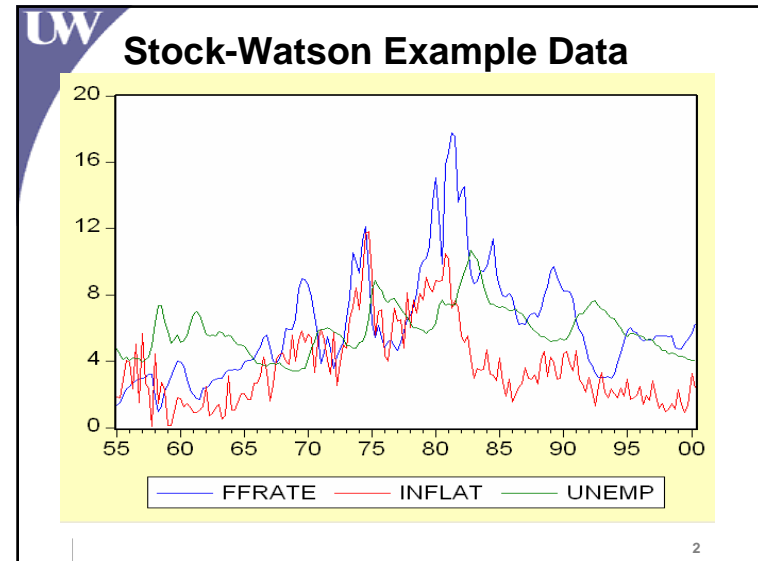
Econ 584

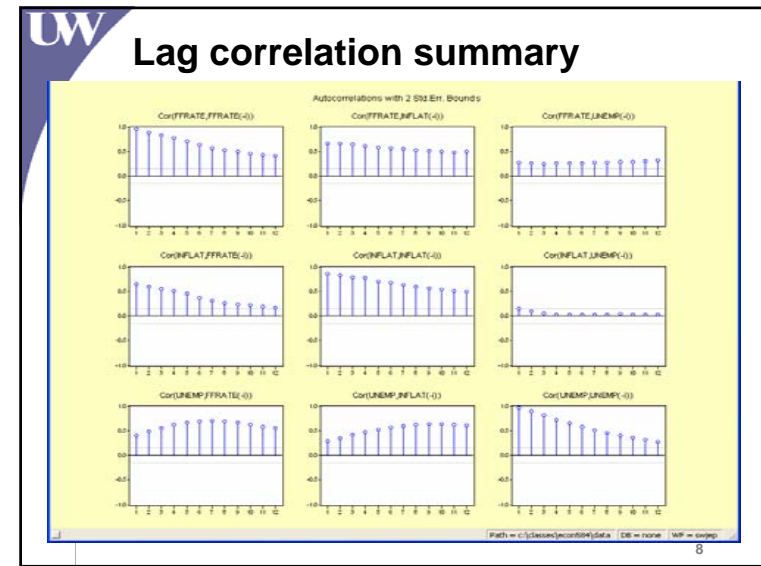
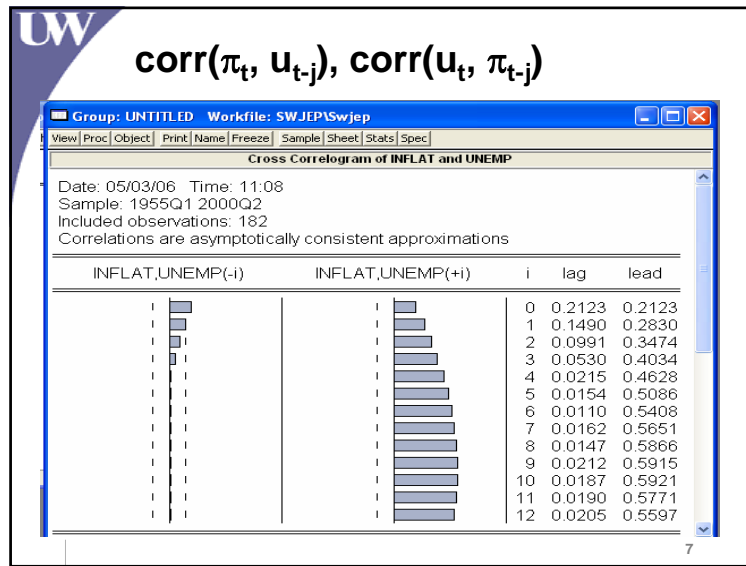
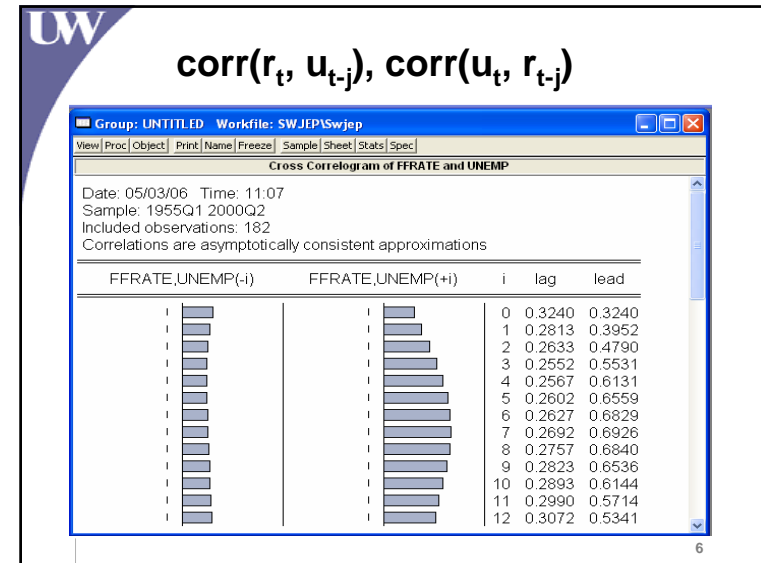
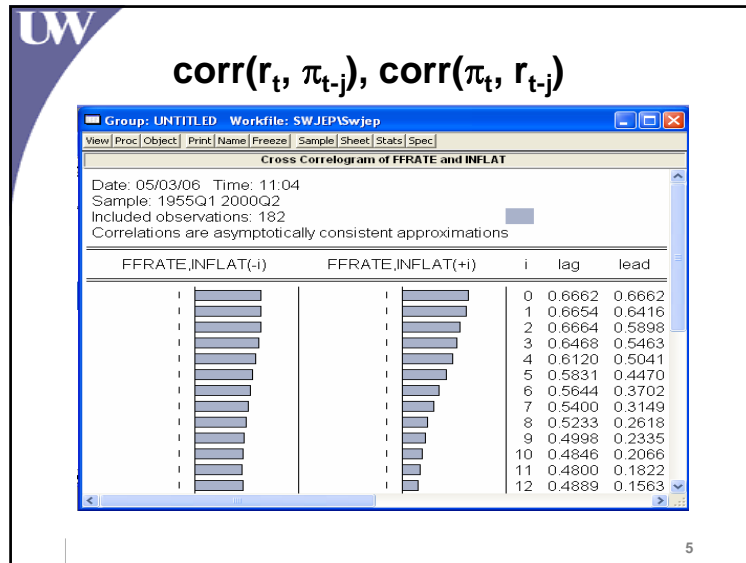
Time Series Econometrics

Multivariate Time Series

Eric Zivot
May 3, 2006

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Automatic lag length selection

EWViews - [Var: UNTITLED Workfile: SWJEP\$wjejp]

File Edit Object View Proc Quick Options Window Help
View Proc Object Print Name Freeze Estimate Stats Impulse Resids

VAR Lag Order Selection Criteria
Endogenous variables: FFRATE INFLAT UNEMP
Exogenous variables: C
Date: 05/03/06 Time: 11:19
Sample: 1955Q1 2000Q2
Included observations: 174

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|-----|-----------|-----------|-----------|-----------|-----------|----------|
| 0 | -1111.725 | NA | 73.64849 | 12.81293 | 12.86740 | 12.83503 |
| 1 | -548.3197 | 1100.908 | 0.125789 | 6.440456 | 6.658322 | 6.528836 |
| 2 | -489.6807 | 112.5599 | 0.071104 | 5.869893 | 6.251158* | 6.024557 |
| 3 | -474.8072 | 28.03739 | 0.066479 | 5.802381 | 6.347046 | 6.023331 |
| 4 | -459.7487 | 27.86685 | 0.062035 | 5.732744 | 6.408008 | 6.019978 |
| 5 | -452.2485 | 13.62097 | 0.062160 | 5.749983 | 6.621447 | 6.103502 |
| 6 | -437.2562 | 26.71045* | 0.059019* | 5.681106* | 6.715969 | 6.100910 |
| 7 | -435.0793 | 3.803321 | 0.063927 | 5.793532 | 6.957795 | 6.245621 |
| 8 | -429.8794 | 8.905638 | 0.066910 | 5.808211 | 7.164873 | 6.355585 |

* 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

Lags chosen by model selection criteria

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VAR(2) Model

Vector Autoregression Estimates
Date: 05/03/06 Time: 11:23
Sample (adjusted): 1955Q3 2000Q2
Included observations: 180 after adjustments
Standard errors in () & t-statistics in []

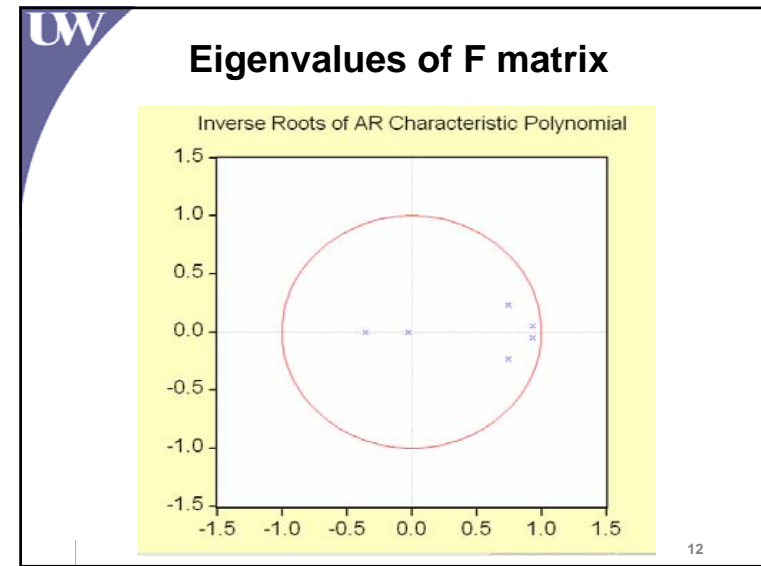
| | FFRATE | INFLAT | UNEMP |
|------------|--------------------------------------|--------------------------------------|--------------------------------------|
| FFRATE(-1) | 0.963373 (0.08296) [11.6129] | 0.283295 (0.10625) [2.66631] | 0.009306 (0.02398) [0.38806] |
| FFRATE(-2) | -0.072105 (0.08386) [-0.85978] | -0.234782 (0.10741) [-2.18580] | 0.024353 (0.02424) [1.00454] |
| INFLAT(-1) | 0.022536 (0.05581) [0.40383] | 0.508082 (0.07148) [7.10848] | 0.026214 (0.01613) [1.62498] |
| INFLAT(-2) | 0.131268 (0.05725) [2.29284] | 0.363334 (0.07333) [4.95505] | -0.026581 (0.01655) [-1.60617] |
| UNEMP(-1) | -1.015520 (0.23915) [-4.24643] | -0.115833 (0.30629) [-0.37818] | -1.505194 (0.06913) [-21.7734] |
| UNEMP(-2) | 0.971430 (0.22837) [4.25372] | 0.020749 (0.29249) [0.07094] | -0.575886 (0.06602) [-8.72354] |
| C | 0.375021 (0.28914) [1.29701] | 0.744328 (0.37033) [2.00992] | 0.211101 (0.08358) [2.52567] |

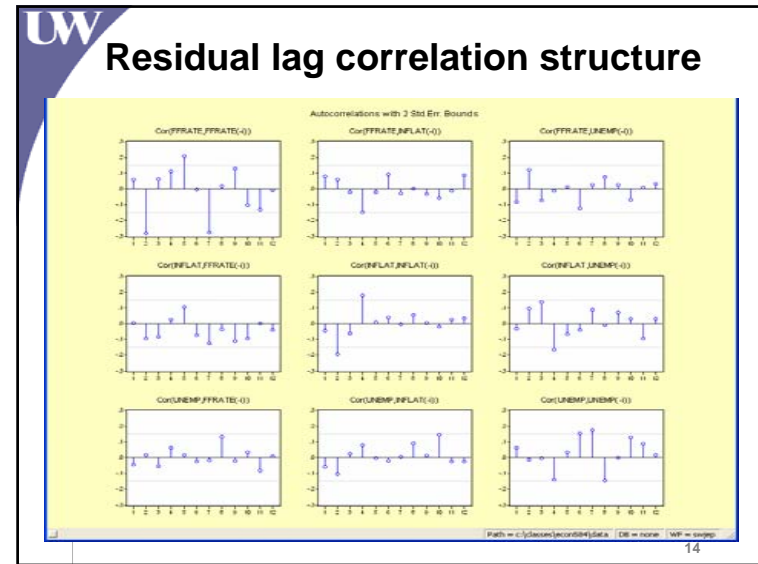
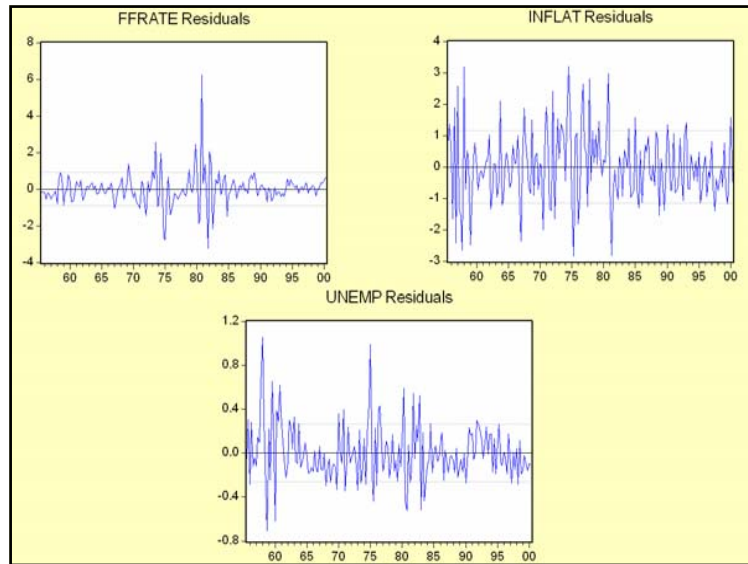
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Goodness of Fit Statistics

| | FFRATE | INFLAT | UNEMP |
|----------------|-----------|-----------|-----------|
| R-squared | 0.926086 | 0.784407 | 0.970363 |
| Adj. R-squared | 0.923523 | 0.776930 | 0.969335 |
| Sum sq. resids | 141.8205 | 232.6407 | 11.85063 |
| S.E. equation | 0.905413 | 1.159631 | 0.261726 |
| F-statistic | 361.2617 | 104.9063 | 944.0548 |
| Log likelihood | -233.9534 | -278.4974 | -10.55707 |
| Akaike AIC | 2.677260 | 3.172193 | 0.195079 |
| Schwarz SC | 2.801431 | 3.296364 | 0.319249 |
| Mean dependent | 6.193370 | 3.757697 | 5.892593 |
| S.D. dependent | 3.274016 | 2.455269 | 1.494611 |

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Pairwise Granger Causality Tests

Pairwise Granger Causality Tests
Date: 05/03/06 Time: 14:12
Sample: 1955Q1 2000Q2
Lags: 2

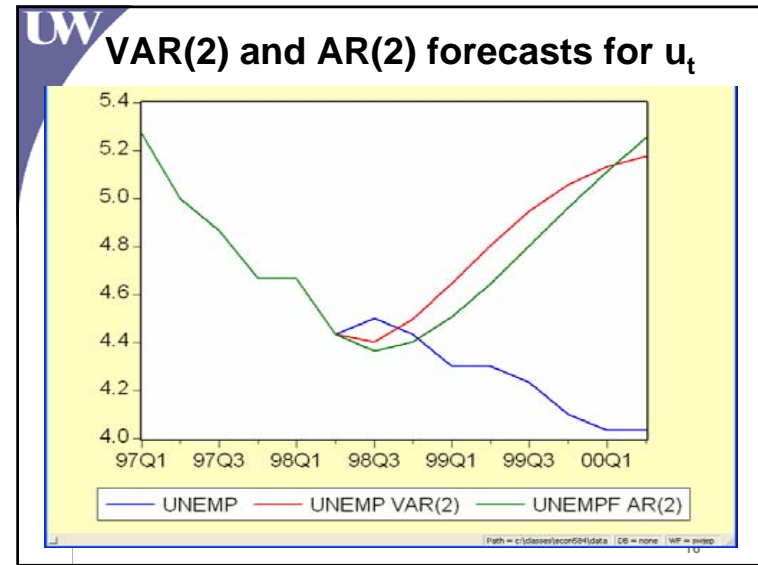
| Null Hypothesis: | Obs | F-Statistic | Probability |
|--------------------------------------|-----|-------------|-------------|
| INFLAT does not Granger Cause FFRATE | 180 | 3.58975 | 0.02966 |
| FFRATE does not Granger Cause INFLAT | | 5.96635 | 0.00311 |

Pairwise Granger Causality Tests
Date: 05/03/06 Time: 14:14
Sample: 1955Q1 2000Q2
Lags: 2

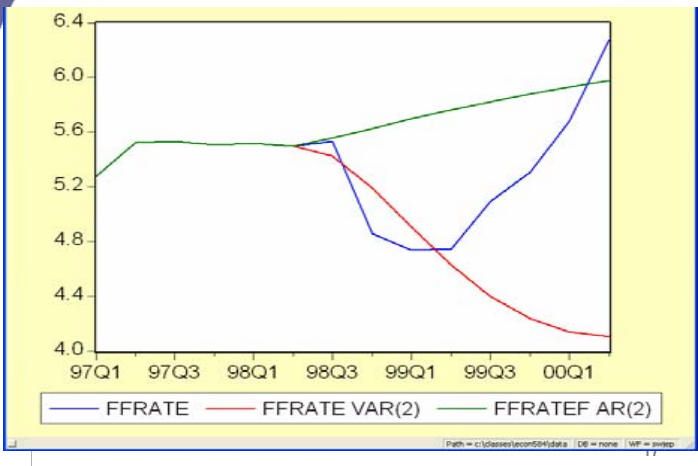
| Null Hypothesis: | Obs | F-Statistic | Probability |
|-------------------------------------|-----|-------------|-------------|
| UNEMP does not Granger Cause FFRATE | 180 | 5.28080 | 0.00593 |
| FFRATE does not Granger Cause UNEMP | | 13.0718 | 5.1E-06 |

Pairwise Granger Causality Tests
Date: 05/03/06 Time: 14:15
Sample: 1955Q1 2000Q2
Lags: 2

| Null Hypothesis: | Obs | F-Statistic | Probability |
|-------------------------------------|-----|-------------|-------------|
| UNEMP does not Granger Cause INFLAT | 180 | 2.98796 | 0.05297 |
| INFLAT does not Granger Cause UNEMP | | 6.55952 | 0.00179 |



VAR(2) and AR(2) forecasts for r_t



VAR(2) and AR(2) forecast for π_t

