



College of Business Administration
Department of Economics
Business cycles and Forecasting
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ECO 6433
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QUIZ

- This is an open book quiz. The quiz is held at the McGruder Lab.
- The quiz totals 100 points, allocate your time accordingly.
- At the end of the quiz, e-mail me at *omikhail@bus.ucf.edu*, one WORD document file that contains your answers, solutions, the code, graphs and tables.
- Use EViews to do your analysis [batch mode or interactive mode? your call]. If you are using the batch mode, include a copy of the code in your Word document.
- When testing for a **unit root**, be specific and clear.
- When choosing the optimal order of **ARMA**, show all the steps taken. Find the **ARMA(p,q)** that fits well, and defend its adequacy.
- Download the ASCII data files for the exam from the class web page.
- Inflating your document file with irrelevant computer output will significantly impact your grade, downward.
- Clearly detail your analysis and findings. Be specific at every step. Answer the questions, explain why are you taking each step, and most importantly, discuss your results. Producing the computer output is necessary, but what is more important and valuable is to be able to accurately explain - in simple terms - the results.

June 16, 2005

Question I: 20 points

Define each one of the following and state why it is useful. Limit your answer to no more than one short paragraph for each.

1. White Noise.
2. Innovation.
3. Akaike Information Criterion.
4. Schwartz Information Criterion.
5. Stochastic Trend.
6. Deterministic Trend.
7. Correlogram.
8. ARMA(p,q).

Question II: 30 points

As a forecaster at an investment dealer, you are in charge of forecasting and modeling exchange rates. Forecast and model the yen/dollar and the dutch/dollar monthly exchange rates. The series covers the period from 1973:01 to 1996:07. [The ASCII data file is exchange.dat]. Forecast each one of the series to 2010:12. Assess the stability of the forecast models using recursive parameter estimation and recursive residuals. Discuss your results.

Question III: 30 points

Suppose that you work for Delta Airlines and you are modeling and forecasting the miles per person (passenger-miles) traveled on their flights through the four quarters of the year. The series have been de-trended using the Hodrick and Prescott (HP) filter. The series is now measured as a percentage deviation from the trend (i.e., we took the log and then we removed the trend using the HP filter, then we subtracted the HPtrend from the log of the series, and this is what is given to you). The data covers the quarterly period from 1989:1 to 2004:4. [The ASCII data file is DeltaAirlines.dat] Industry experts believe that there are strong seasonal effects, which you think might be very important for modeling and forecasting passenger-miles.

Fit a quarterly seasonal model to the data and assess the importance of the seasonal effects. What is the estimated seasonal pattern? Forecast the model. Discuss the adequacy of the fitted model. Use recursive procedures to assess whether the seasonal coefficients are evolving over time. Discuss your results. If the seasonal coefficients are evolving over time, how might you model that evolution and thereby improve your forecasting model?

Question IV: 20 points

You are given a 100 observations on total sales of T-shirts at T-shirts.com (in thousands of dollars) [The ASCII data file is sales-T-shirts.dat]. Forecast total sales for the next eight periods. Graph the point forecasts and their standard errors. Explain and show why the model you choose to describe sales is the best ‘optimal’ model. Assess the stability of the forecast model using recursive parameter estimation and recursive residuals. Discuss your results.

Question V: BONUS 5 points

What is a ‘vector’? What does the command ‘coef’ do in EVIEWS?