SUNY-Stony Brook. Economics Department
Economics 323: Fall 2011
Professor Hugo Benítez-Silva

Sample Questions for Midterm 2 (Tuesday November 22).
(Suggested Answers will be provided by the end of Sunday November 20).

Remember that for this midterm you have to study the following topics: Uncertainty (theory and exercises), and all the notes on statistics and econometrics up to the issues covered in class on Tuesday Nov. 15th, and reviewed in class on Thursday November 17.

1. **True or False.** In the exam credit will only be given for justified answers.

   a) Regressions using time series data usually have considerably lower R-squared since they do not exploit the individual variation present in cross-sectional data. **True or False**

   b) A risk-averse individual will always buy insurance if offered to him by a reputable insurance company. **True or False**

   c) An insurance company that makes an economic profit will, most likely, offer unfairly priced insurance. **True or False**

   d) Given two variables, Y and X, if their correlation coefficient is positive and close to 1, it means that low values of Y are usually observed along with low values of X. **True or False**

   e) Most diversification strategies try to maintain the risk of a particular portfolio by sacrificing part of the upside potential of the investment. **True or False**

2. **The risk of uncertainty**

Oskar's preferences can be represented by a utility function U(w)= sqrt(w).
He is faced with a gamble that provides 9 units of wealth with probability 0.5, and 25 units with probability 0.5. How much money for sure will give Oskar the same utility as playing the lottery? (**Hint**: given his utility function Oskar is risk averse, therefore the answer may (or may not) be different from the Expected Money Value of the lottery.)

a) 12.5
b) 9
c) 16
d) 17
e) None of the above

3. **Fertility, Female Literacy**, and more

Think of an economic model that tries to explain the differences across countries in fertility rates with the data on those same countries on female literacy rate.
We are fortunate enough to have data for a number of countries both on fertility rates (TFR) and female literacy (FL) rates. And we propose to estimate the following econometric model:

$TFR = \beta_0 + FL\ \beta_1 + u_i$

After estimating the parameters of the model the Sum of Squares of the Regression is 56.208, and the Total Sum of Squares is 143.45. Also the estimated value for β_0 is 7.4.

a) Given the information above compute the R-squared of the regression.

b) Explain the meaning of the number calculated in a) as clearly as possible.

c) Explain the meaning of the estimated β_0.

d) What do you think will be the sign of the estimated β_1? Explain the meaning of this parameter.

e) Can you think of other variables that could affect the Total Fertility Rate on top of female literacy, and how? Explain.

Extra Credit: Given your answer in e), what do you think would be the consequence if we tried to explain in the regression framework the TFR both with the FL variable and the one(s) you suggested? What do you think would happen to β_1? (Note: I will ask this same question in the exam, so think hard about it. See if you can come up with a coherent answer.)