Homework 1 – The Global Firm
Spring 2012

This exercise uses an interesting article (with wide popularity) to illustrate how empirical economists go about proving or disproving a hypothesis. Combined with Friedman's discussion on the methodology in positive economics, it aims to help you appreciate more how modern economic research is done. Some of the techniques used in the article will be highly relevant in your future research, i.e., term paper and Master's thesis.

You don't need to turn in the homework. This is a voluntary homework for your own benefit. You are encouraged to discuss the homework with your peers.

Find the article, "Where have all the criminals gone?" using the following link: at http://www.pauldeng.com/teaching/global_firm/2012/Freakonomics%20-chapter%204.pdf). The piece is a chapter excerpted from Steve Levitt's popular book, "*Freakonomics*".

Do a first-round quick reading, and answer the following questions:

1. What is the research question asked by the author, Steve Levitt?

2. How many alternative explanations has Levitt investigated in his attempt to explain the sudden drop of crime rate in the US in early 1990s? Make a list of these seemingly plausible explanations.

Now read the chapter more carefully again,

3. Levitt looked at each alternative explanation, one by one, before coming down to the final suspect, legalized abortion. The technique he used is what we call "counterfactual analysis" in economics, i.e., to find contradictory facts under the two (or more) very similar situations. Find out the counterfactuals he used in proving/disproving each alternative explanation.

4. It's important to note that each alternative explanation, written econometrically, is just a control variable in the regression analysis. If we were to write down the estimation equation for the drop of crime rate, what would it be? Let's define the dependent variable as the natural log number of crimes, in each state s and year t, i.e., $ln(crime)_{st.}$ (s represents each state in the United States).

5. Check your answers to question 4 against Levitt's original paper at: http://pricetheory.uchicago.edu/levitt/Papers/DonohueLevittTheImpactOfLegalized2001.pdf . Look under pages 401-407. If you were the investigator of the issue, would you learn anything new from Levitt's innovative approach?