

**Senior Integrating Exercise for Honors Economics Majors
Class of 2012**

Instructions

Please read and follow these instructions carefully.

1. You must complete your answer and submit it in person to Ms. April Farmer, Department Secretary (Ascension 113). Submit **two** copies of each essay by **4:00 pm on Friday, January 20, 2012**.
2. Your answer must be printed, double-spaced, on one side of the paper. The answer must be within the range of *eight to twelve pages*. Number the pages. Use one-inch margins. Use a font no smaller than 11-point. Your answers must be in the form of an integrated essay as you will be assessed for both content and style. It is **not** acceptable to simply label sections of your paper “Answer to Part B”, “Answer to Part C”, and so forth. The essay should also include a concluding section. Any figures or tables referenced in the essay may be placed on separate pages at the end of the paper with appropriate titles. Explanations of graphs and figures must be fully integrated into the essay, *not* included separately on the page on which the graph or figure appears. Please label your graphs carefully. These figures and graphs do not count towards the eight to twelve page limit.
3. **DO NOT CONSULT WITH OR TALK ABOUT THESE QUESTIONS WITH YOUR FELLOW STUDENTS.** Do not suggest books, course materials, or other sources to any other student as aids to answering a question. Do not receive assistance from any other persons. **Observe the College's plagiarism rules.**
4. You may consult notes, books, journal articles and other materials that you find helpful in writing your answers. You should properly cite references where appropriate, but course notes and course texts need not be cited when used as sources for standard analytical presentations. Your answers to the questions should be in the form of an essay. Avoid answering in disjointed bits and pieces.
6. You have a fair degree of latitude in composing your essay. Your examination will be evaluated according to the breadth of your perspective, the clarity with which you identify goals when analyzing public policies, and the rigor, organization, and persuasiveness of your analysis. Select and use your tools of economic analysis with great care. **The success of this integrating exercise for you depends upon the effort you put forth in developing your answer.**
7. The oral examination on this question and your second paper from the Senior Honors Seminar will be conducted by the outside examiner and held on either **Saturday, February**

18, 2012 or Saturday, February 25, 2012, according to a schedule that will be posted. A seminar and dinner with the outside examiner will be held on the evening of **Friday, February 17, 2012 or Friday, February 24, 2012** from 4:00 – 8:30 pm. The outside oral examination will focus on your written answers and your paper to permit you to clarify what you meant and to verify your grasp of the issues raised by the question and your paper.

8. Please retain a copy of your senior exercise answer when you submit the two copies of your answer. You should use this copy to review before the oral exam and you should bring it to the oral exam for reference. Results of the Senior Exercise will be communicated to you by e-mail.

If you have any questions, contact Prof. Corrigan or Prof. Krynski.

All the members of the economics faculty wish you good luck!

Social Insurance for Natural Disasters

The annual cost associated with natural disasters, including hurricanes, earthquakes, flooding, and tornadoes, has been rising. Economic damages have tripled over the past 30 years while the number of fatalities has been falling. This increase in damages is not the result of more violent weather patterns, but is due to the increase in physical capital at risk from natural disasters. In particular, there has been tremendous population growth and development in coastal areas that are very vulnerable to flooding and wind damage due to hurricanes and tropical storms, as well as growth in earthquake-prone areas of California.

The federal government offers assistance in natural disasters through the Federal Emergency Management Agency (FEMA). FEMA assistance is in the form of grants to individuals and families for temporary housing, home repairs, and other needs, and grants to states and local governments for clean-up and restoration projects. In addition to FEMA, the American Red Cross provides considerable aid to individuals and families, and the Small Business Administration (SBA) provides low-interest disaster loans to individuals and businesses.

While insurance and government assistance can help in the recovery process, many policymakers think that we should be putting more resources into mitigation efforts. More stringent building codes result in structures that are more resistant to damage from natural disasters and better land-use planning results in fewer structures located in areas prone to flooding and other natural hazards. In the case of the four hurricanes that hit Florida in the fall of 2004 and damaged one out of five homes, there was much less damage done to structures that were built (or rebuilt) under the more stringent building codes instituted after Hurricane Andrew. Better land-use planning is important since building development can increase the severity of flooding when flood plains can no longer absorb excess water because they are paved.

The federal government has offered flood insurance through the National Flood Insurance Program (NFIP) since 1968 when the National Flood Insurance Act was passed. NFIP includes three components. The first is identifying all communities that are at risk of serious flooding and then mapping the flood hazard areas. These maps are then used by the communities for land-use planning and for setting insurance rates. Flood insurance is available from NFIP to individuals as long as their community participates in NFIP. Beginning in 1973, those communities that do not participate forgo certain types of federal assistance in the event of a flood. The program also engages in hazard mitigation activities mainly through local governments' adoption and enforcement of floodplain development and construction standards. Beginning in 1990, NFIP developed a community rating system that is designed to lower insurance rates for communities that reduce flood risk. The third function of NFIP is to provide insurance to individual households and businesses. The purchase of flood insurance is mandatory for any property in an identified flood hazard area that has a federally related mortgage.

- a. One of the rationales for setting up the NFIP was that private flood insurance was not feasible. What are some of the difficulties that private insurers would face that might limit their ability to provide flood insurance? Is the federal government in a better position to deal with these difficulties?

- b. Policymakers are concerned that some households forgo the purchase of flood insurance because of the availability of disaster assistance. In fact, the FEMA website warns individuals that disaster relief is only available to households if the President declares a major disaster and that most assistance is in the form of loans that must be repaid. Use the expected utility model to illustrate a household's decision regarding whether to purchase flood insurance.
- c. In 1992 Hurricane Andrew caused \$36 billion worth of damage along the Florida coast, bankrupting several insurance companies. In response, Florida's Department of Insurance allowed insurers to impose deductibles equal to 2 to 5 percent of the damage from each hurricane. In 2004 four different hurricanes (Charley, Ivan, Frances, and Jeanne) resulted in some homeowners having to pay multiple large deductibles for hurricane damage to their homes. Florida's insurance commissioner, Tom Gallagher, has gone on the record to say that he thinks multiple deductibles are unfair and he thinks the current level of deductibles is too high. Why do insurers favor higher deductibles even when premiums are reduced as a result?
- d. Existing communities and further economic development in hazardous areas create significant risk of catastrophic losses from natural disasters. An individual's property loss is typically viewed as a private problem, best dealt with by the purchase of private insurance or private efforts to mitigate risk to the property. However, when these individual risks are aggregated by the forces of a natural disaster, some economists have argued that this causes the risk to shift from a private to a social risk. Do you agree and do you think that this serves as a rationale for the provision of social insurance against losses from natural disasters?