PhD Policy Comprehensive Exam
Spring 2009

Instructions: Answer all three questions. Note that you have a choice in Question III.

Question I
Develop a research design to evaluate the impact of an ongoing public program, policy, or institutional design; to compare the impact of program, policy, or institutional design alternatives; to examine cause (or causes) of policy or institutional choice by legislators, legislatures, bureaucrats, or bureaus; or to examine reasons for the differential implementation of policy by bureaucrats or bureaus.

Choose any policy area that you are familiar with. The application MUST be theoretically non-trivial. For example, it should relate to important normative questions of designing institutions that are representative, accountable, and efficient, or to tradeoffs among those values. Or it could relate to theoretically important disputes (for example, about government or market failures, or about cooperation versus self-interest). Discuss the theory or theories that motivate the research question, hypotheses, and the experimental or statistical model. Briefly describe the program or policy alternatives, or policy decisions, that you are examining, and discuss and justify the outcome measure(s) you will use. Based on theory, what do you expect to find? Why will your findings be theoretically important? Cite relevant literature and previous findings.

Develop a feasible research design to estimate the parameters of your theoretical model. In your design, consider some of the problems you anticipate in generating unbiased and efficient estimates, and suggest how you might address these problems. Include in your discussion the following items, as well as others you believe are pertinent:
    *how you propose to collect data;
    *problems of measurement;
    *how you will analyze the data you collect;
    *given your analytical strategy, what are the important threats to internal and
        statistical validity (that is, threats to generating BLU estimates and steps to
        minimize these threats);
    *issues of external validity;
    *how you will interpret the data you collect in light of the theory you are testing.

Question II

1) <u>Economics, Governments and Drugs</u>

    a) Why do most governments in developed countries prohibit the consumption and sale of drugs like cocaine, heroine, and marijuana? More specifically, what, if any, market failure (or failures) might justify intervention in the market for these drugs? If there is a market failure, explain it using supply and demand (and price) curves. Show the deadweight loss.

    b) What government response would be efficient, given the nature of the market failure(s)? Why would the efficient response reduce or remove the deadweight loss? (Illustrate your point using supply and demand curves.)

    c) What, if any, market failure (or failures) might justify *prohibition* of the consumption and sale of these drugs? What are the likely consequences of prohibition on price, supply and demand, and on social loss or benefit? (Illustrate using supply and demand curves.) What are the likely external consequences of prohibition by developed countries for developing countries? (80% of the world's production of heroin is from Afghanistan; virtually all of the world's production of coca is from Bolivia, Colombia and Peru.)

    d) From the perspective of efficiency, is prohibition likely to be a government failure, in that it exacerbates market failure, or a success, in that it reduces market failure? More generally, why do you think most democratic governments in developed nations choose to prohibit the sale and consumption of these drugs, compared to alternative policies (including doing nothing)?

2) Statistics and Drug Prices (Cocaine):

Table 1 (on the next page) reports estimates from four different models of the impact of various indicators of drug control enforcement efforts on the street price of cocaine for a cross section of countries, controlling for several other variables. The model in column 1 includes control variables, but no indicator variables for drug control enforcement efforts. While the remaining columns contain results from models with a binary variable for a different drug control enforcement effort. The three drug control enforcement policies studied are: people prosecuted for drug offenses, police personnel, and outlays for public order and safety.

a) Discuss the results for the main policy variables in columns 2-4 (i.e., the drug control enforcement efforts) and for the significant control variables in columns 1 and 2.

b) Do you believe the estimates for the main policy variables (i.e., the drug control enforcement efforts)? Discuss how well the assumptions for valid parameter estimates and estimates of standard errors are likely to fit this particular application.

c) How do the results pertain to your responses in Parts 1a) and 1d) of Question II? Do they uphold your conjecture about market/government failure, or are do they raise questions about your conjecture?

Table 1. Cocaine Prices

Dependent variable: Cocaine Retail Prices, constant 2000 US$ per gram

	[1]	[2]	[3]	[4]
Cocaine Producer Countries	-29.5567***	86.1653	-29.0034**	-28.4576***
(dummy: 1 if cocaine	-2.75	1.39	-2.41	-2.70
cultivation is reported)				
Cocaine Seizures	-17.758***	-60.130**	-16.486***	-17.529***
(base and salts;	-3.66	-2.47	-3.39	-3.78
kg per 1,000 population)				
GDP per capita	26.117***	21.808**	28.846***	22.076***
(PPP, 2000 international $	6.39	2.55	4.36	3.17
in logs)				
People Prosecuted for Drug Offenses		0.3280		
(per 100,000 population, in logs)		0.06		
Police Personnel			1.4132	
(per 100,000 population, in logs)			0.14	
Outlays for Public Order and Safety				1.8510
(per capita, PPP, 2000 international $, in logs)				0.60
Constant	-160.646***	-111.961	-193.650***	-127.688**
	-4.52	-1.50	-3.41	-2.14
No. of observations	102	57	69	70
R-squared	0.35	0.29	0.35	0.27

Notes:
1. Method of estimation: Ordinary Least Squares with Robust Standard Errors
2. t-statistics are presented below the corresponding coefficients.
3. ** and *** denote significance at the 5 percent and 1 percent levels, respectively.
4. Variables are an average of 1997-2005 by country, except for a dummy variable for cocaine producer countries.
5. PPP means purchasing price (or power) parity, adjusting nominal prices to the US dollar in 2000.

Question III [answer EITHER part 1 or part 2]

1) <u>Program Evaluation</u>

    a) Briefly and clearly outline both an experimental and quasi-experimental option for designing an evaluation to address one specific causal claim. (Consider only one quasi-experimental design.) The causal claim could be: putting more teachers in the classroom increases students' academic performance; or, OSHA inspections improve workplace safety; or, no-smoking regulations in the workplace improve productivity; or, putting more border control agents (or more fencing) on US borders reduces illegal immigration; or paying teachers for performance improves the quality of teaching; or any similar causal claim that you wish to consider regarding a program, policy, or management choice. Discuss the data you would collect, and the statistical model(s) that you would use to estimate the key theoretical or policy parameters.

    b) Discuss strengths and weaknesses of each design, particularly from the perspectives of internal, external, and statistical validity, as well as political and technical feasibility and, if relevant, ethical considerations.

    c) Finally describe which evaluation design you would select and explain why.

2) Policy researchers can choose among three major types of designs: randomized field experiments (RFEs), quasi-experiments, and non-experiments.

    a) In general, briefly discuss the primary characteristics, advantages, and disadvantages of each of these three types of designs.

    b) Which of these three types of designs would you use to test the hypothesis that women who earn higher salaries are more likely to return to work after childbearing than women with lower salaries. Justify your answer with a discussion of internal validity, external validity, and feasibility. (You do not need to describe the details of your design; however, it may be useful to identify a specific type of design within the general category of design that you recommend.)

    c) What underlying general theory (if any) underlies this expectation, and how (if at all) does the use of a general theory help you to evaluate the validity of your design?