PhD Policy Comprehensive Exam
Fall 2009
Answer Question I, II and any one other

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
(a) Signed into law on January 8th 2002, President Bush's 'No Child Left Behind' (NCLB) Act has created much controversy. Essentially, the act ties federal funding for primary education to measures of school performance. School districts that are unable to meet proficiency levels on standardized test instruments for a certain number of years are required to offer parents additional choices for educating their children through voucher programs, magnet schools, or other options, including charter schools.

As a policy researcher, evaluate the merits and drawbacks of the 'No Child Left Behind' Act. Can it be viewed as an efficient response to a market failure, a government failure, or both? What is the relevant market failure here (if any)? Use graphs where

appropriate.

(b) In many states, charter schools are regarded as a practical and politically acceptable response to NCLB in providing students with more choice. The question is whether charter schools are effective. One study examined the student-level performance of children in charter and non-charter schools in Milwaukee, Wisconsin. According to the authors: (This quote is somewhat edited.)

"We were able to obtain individual student test data for the Milwaukee school district, including students in its charter schools. With these data, we perform conventional statistical analyses, using administratively available data to control for student characteristics, and various value-added specifications taking advantage of repeated test data for each student.
Data and Methods. The Milwaukee Public School District (MPS) provided redacted student test data in reading, language arts, and mathematics for the years 1998–99 to 2001–02. The analyses use a "stacked" database, including observations for each test for each student in every year the student was tested. Thus, if a student were tested in each test in every year, there would be 12 individual data entries for the student. The total data set includes over 472,000 observations of student test scores, including 8,357 for students who switched from a traditional school to a charter and 2,623 who switched from a charter to a traditional school. Large sample sizes allow us to make separate estimations for all students, and then separately for blacks, Hispanics, and whites.
The dependent variable was the national percentile rank of the student on the respective Terra Nova test (reading, language, math). We estimated the same analyses with Scale Scores for the Terra Nova with very similar results. Because we are using student fixed effects, the only independent variables we included were charter status and test type for the fixed effects models. To simplify the equations below, we have suppressed a subscript for the subject matter of the exam. The fixed effects models employed are shown in the equation below:

$$n_{it} = \alpha_i + \beta_1(\mathrm{CH} * \mathrm{L})it + \beta_2(\mathrm{CH} * \mathrm{M})it + \beta_3 \mathrm{M}it + \beta_4 \mathrm{L}it + \beta_5 \mathrm{CH}i + \mu_t + \varepsilon_{it}$$

where:

n_{it} is the national percentile ranking for student *i*;
(CH * L)*it* is an interaction term between charter status and the language exam for student *i* at time *t*;
(CH * M)*it* is an interaction term between charter status and the math exam for student *i* and time *t*;
Mit takes the value "1" if the student took the math exam and "0" if not;
Lit takes the value "1" if the student took the language exam and "0" if not;
CH*i* takes the value "1" for charter schools and "0" for non-charters;
the α_i, and βs are estimated parameters;

and μ_t and ε_{it} are error terms due to excluded variables and sampling."

The results appear in Table 1:

Table 1: Milwaukee Charter School Students vs. Students in Traditional Schools, 1998-2002.

Fixed Effects results for all students:

Charter	1.817
	(.216)
Charter*L	.481
	(.254)
Charter*M	.523
	(.253)
Constant	43.568
	(.038)
N	472,453

Fixed effects for each student and type of test included but not reported.
Robust standard errors in parentheses.

(i) What do the results in Table 1 say? Interpret the relevant coefficients.

(ii) What do the results in the table above tell you about the impact of charter schools on student performance? What, if any, are the implications of the results for the efficacy of charter schools as a means to improve the quality of public schools?

(iii) Do you believe the results reported in the table? Specifically, do you believe the parameter estimate for the main policy variable, and the corresponding significance test result? Discuss how well or how poorly the model above meets the assumptions necessary for valid parameter estimates and hypothesis tests. How could you improve the model?

Choose one from the remaining four questions (III, IV, V, VI):

III. Citing and using relevant literature, write a mini-essay on each of the following topics:

(a) Why bureaucracies are efficient;
(b) Why bureaucracies are inefficient.

Then, describe an empirical test of these contending theories using as units of analysis U.S. (or Canadian, or Korean, or German, etc.) federal, state or local government workers

or agencies. (You can also use cross-national comparisons.)

Your empirical test can apply to government services in general (e.g., comparing public to private provision), or it can apply to the provision of a particular type of government service (e.g., education, criminal justice, social services, etc.)

IV. (a) How necessary and/or useful is the concept of "social capital" in explaining how collective action problems are successfully resolved a) among citizens, in their capacity as consumers and/or producers; b) among public (or private) sector employees, in their capacity as producers of goods/services whose quality or long run effectiveness is hard to measure and/or produced in teams; and c) between citizens and street-level bureaucrats? In your answer, cite relevant literature and consider whether the idea of "social capital" is really new, or merely an application of standard theories of repeated games.

(b) Take one of the theoretical claims about "social capital" that you discussed in part (a) of this question and describe how you would test the claim empirically.

V. Answer the following question as asked, OR answer it by using taxes on cigarettes OR taxes on alcoholic beverages as the example of choice.

Mark Twain observed that humans have in common not only death, but also taxes. Motor vehicle fuel taxes are among the most common of taxes. Developing nations and developed nations all have some sort of gasoline tax, though some may have none; within the U.S., all of the states have a gasoline tax, some of it imposed by the national government, but the rest chosen by the state.

(a) What, if any, market failure (or failures) justifies the imposition of gasoline taxes by government? If there is a market failure rationale, what, in theory, should be the optimum level of the tax? Should it be uniform? At what level of government (national or sub-national) should it be implemented? (Use supply and demand curves, if necessary, to illustrate your answer.)

(b) What theories of policy choice would be useful in explaining why some nations (<u>or</u> states within the U.S.) select different levels of the motor vehicle fuel tax? Consider in your answer theories of rent seeking, election incentives, matters of institutional design, and other theories or variables that might be relevant. Cite relevant literature. Briefly discuss how you would test these theories in the context of examining variation in gasoline taxes, and specify your theoretical equation(s).

(c) What are the likely consequences of increases (decreases) in the level of the gasoline tax? Consider beneficial as well as adverse consequences, and intended as well as unintended consequences. Briefly describe a research design to test ONE of your hypotheses regarding the likely consequences of a change in the level of the gasoline tax.

VI. Design a Randomized Field Experiment (RFE) to answer the same question posed in Question II.b. Note this is a thought experiment and the design does not need to be feasible. In your answer, describe how you will select the study sample, what you will randomize, what is the likely sample size, and how you will analyze the data. Compare the strengths and weaknesses of the RFE and the design in Question II.b, particularly from the perspectives of internal, external, and statistical validity, as well as political and

technical feasibility and, if relevant, ethical considerations. Finally, describe which evaluation design you would select and why.