PhD Policy Comp Summer 2016

Instructions:
First field: Answer I and choose any TWO among the remaining questions.
Second field: Answer I and any ONE of the remaining questions.
Note: In all questions with subsections, answer all subsections; each subsection counts equally.

Question I:

I-1) Economics:
HIV/AIDS emerged as a public health issue in the early 1980s, and it is still on the policy agenda of many international governance organizations, nations, sub-national units of governance, and cities. There is still no cure for this disease, which, without expensive therapeutic drugs, results in death. Even with expensive treatment by drugs, morbidity (illness) follows, robbing those with the disease of the ability to work to their full potential. HIV/AIDs is still a worldwide threat; in 2007 there were 2.7 million new infections and 2 million AIDS-related deaths. The epidemic is particularly widespread in Sub-Saharan Africa, and it is thought that it contributes to other economic difficulties that that region already faces. Yet HIV/AIDS is not like TB, which used to be a well-known killer, or malaria or cholera, which are other dread diseases. TB, malaria, and cholera are not diseases caused by (risky) choice; in contrast, HIV/AIDs is (partly) caused by the choice to engage in risky sexual behavior. While there is no cure for HIV/AIDs, nor any any vaccine, it is possible to reduce the risk of getting the disease.

From the point of view of efficiency, why should HIV/AIDs be, or not be, on the <u>public</u> agenda? What, if any, are the relevant market failures, and what, in theory, would be an optimal response? If there should be a public response, what unit of government would be the optimal responder? Why?

Use the theory of market efficiency and market failure to develop your response; use (and label) diagrams to help you explain your response.

I-2) Statistics:

A recent study funded by the African Development Bank investigated whether governance plays any role in accounting for the prevalence of the HIV/AIDs epidemic. Using a sample of 90 countries worldwide, the results appear in the Table below, labeled Table 7. The indicators for the quality of governance come from the World Bank; they are standardized scores, where higher values imply higher quality of governance. Each of the governance indicators is an index. Each index is a summation of data from various national surveys of citizens' perceptions of aspects of government that the World Bank, and many others, believes to be effective governance. In this study, 3 (of 5) indicators are used; for the question, focus only on the rule of law indicator. Rule of law means that laws are enforced with relative impartiality for all citizens. HIV/AIDs prevalence is measured by the ratio of the percent with the disease to the percent without the disease. In

the regression below, rather than use the prevalence ratio, the authors chose to use the log of the prevalence ratio. A GINI coefficient of 100% is maximum income inequality; 0 is perfect equality of income. The statistics for these variables are in the table of descriptive statistics. The descriptive statistics table also defines the other variables.

Focus on the results in column 6 of the regression table below.

a. What do the results in the column 6 of the table tell you about the impact of governance on the prevalence of HIV/AIDs? What do the results tell you about the impact of other factors on HIV/AIDs prevalence? What, if any, are the implications of the results for efforts to improve governance as a means of addressing disease (or, HIV/AIDS, in this particular case)?
b. Do you believe the results reported in column 6 of the table below? Specifically, do you believe the parameter estimate for governance? The significance test result? Discuss how well or how poorly the model above meets the assumptions necessary for valid parameter estimates and hypothesis tests.
c. How could you improve the model?

I-3) Program Evaluation

Describe how a randomized field experiment might be used to examine the impact of free contraceptives on the incidence HIV/AIDs. What would the experiment look like? What statistical model would you use to estimate program impact? Then describe how a quasi-experimental design might be used to accomplish this same task. What type of quasi-experimental design would you use, and what statistical model would you use to estimate program impact? Briefly comment on the validity and feasibility of each design, and compare them to the likely validity and feasibility of your improved non-experimental model above, from I.2c. Based on your comments, which of the three approaches would you pick?

REFERENCES

Table 7: Descriptive Statistics

Variables	Observ.	Mean	SD	Min	Max
HIV prevalence rate (15-49 years old)	90	2.953	6.125	0.081	33.385
Income Inequality (GINI)	90	42.197	9.141	26.806	74.328
GDP per capita (in PPP adjusted 2005 USD)	90	5935	6703	319	41478
Public health spending (share in GDP)	90	5.737	1.862	2.100	12.200
Population density (per sq. km)	90	176.848	670.556	1.630	6301.597
Television sets (%)	90	58.665	34.908	2.000	99.480
Contraceptive use prevalence	90	49.674	23.026	5.300	96.000
Female literacy rate ($>$ 15 years)	90	72.547	25.791	15.084	99.760
Government effectiveness	90	0.139	1.018	−1.570	2.220
Control of corruption	90	0.134	1.029	−1.510	2.490
Rule of law	90	0.072	1.014	−1.700	2.050
Religious fractionalization	90	0.420	0.235	0.002	0.860

Table 1: OLS Regression of Logit of HIV prevalence rate

Dependant variable: Logit of HIV prevalence (15-49)	OLS Estimates (1)	(2)	(3)	(4)	(5)	(6)
Government effectiveness	−0.619 (0.139)	−0.303 (0.128)				
Control of corruption			−0.549 (0.136)	−0.229 (0.118)		
Rule of law					−0.583 (0.130)	−0.222 (0.129)
Log of Income Inequality		2.720 (0.467)		2.580 (0.460)		2.586 (0.464)
Log of GDP per capita		0.106 (0.166)		0.166 (0.160)		0.135 (0.164)
Log of Public health spending		0.525 (0.323)		0.563 (0.327)		0.501 (0.326)
Population density		−0.032 (0.072)		−0.027 (0.073)		−0.020 (0.072)
Television sets (%)		−0.300 (0.157)		−0.359 (0.155)		−0.358 (0.155)
Contraceptive use prevalence		0.355 (0.334)		0.249 (0.324)		0.317 (0.335)
Female literacy rate		0.208 (0.302)		0.233 (0.304)		0.187 (0.310)
Religion Fractionalization		1.313 (0.609)		1.368 (0.600)		1.370 (0.620)
Sub-saharan Africa dummy		1.791 (0.481)		1.776 (0.490)		1.783 (0.485)
Constant	−4.818 (0.169)	−18.819 (2.009)		−18.398 (2.059)		−18.172 (1.964)
Joint sig. test of controls: p−value	0.000	0.000	0.000	0.000	0.000	0.000
# Observations	90	90	90	90	90	90
R-squared	0.140	0.761	0.112	0.755	0.123	0.754

All regressions are estimated with White's correction of heteroscedasticity. Robust Standard errors are in parentheses.

II. Economics (and politics)

The economics and politics of environmental regulation:

a. Using sound economic reasoning, argue in favor of governmental regulations designed to decrease pollution. Complement your verbal argument with a diagram of the market for kilowatts of energy. Assume that the production of each kilowatt creates $5 of damage to the environment. Clearly label the socially optimal equilibrium quantity of kilowatts on the horizontal (x) axis as Q^S. Also label the equilibrium quantity in the absence of any governmental regulation (the private-market equilibrium) as Q*. Comment on how, if at all, Q* differs from Q^S.

b. Explain why the socially optimal level of pollution is unlikely to be zero, both graphically and intuitively. Place pollution on the x (horizontal) axis and costs of pollution abatement (in dollars) on the y (vertical) axis.

c. Suppose that a group of renowned AU scientists reach the conclusion that Tenleyville can safely absorb $5,000 of energy-related damage per year – anything more would create serious problems both in the long and short term. Because Tenleyville is home to 5 energy producers, Mayor Bloomfield decides that the fairest course of action is to assign a quota of 1,000 kilowatts per firm. Economically, under what conditions is this policy efficient? When is this policy inefficient? Explain intuitively, but be precise.

d. Now suppose that the policy enacted in part c is, in fact, horribly inefficient. If Mayor Bloomfield hired you as his chief policy analyst, and asked you to devise an efficient solution – i.e., a policy that would push the economy towards the socially optimal equilibrium, what would you suggest? (Hint – we know that each kilowatt produced creates exactly $5 of harm to the environment).
e. Which policy, (c) or (d), or the status quo (do nothing) is Mayor B, who seeks re-election next year, most likely to support? Briefly discuss why you think this is likely.

III. Policy Implementation

In a classic representative bureaucracy study, Thielemann and Stewart present evidence that individuals living with AIDS prefer to receive services from care providers that share their sexual orientation. Many scholars working in the area of representative bureaucracy argue their work belongs firmly in the public management camp, however others contend that the field sits at the nexus of management and policy.

Write an essay that supports the position that scholarship on representative bureaucracy is valuable to the understanding of policy implementation. Review recent representative bureaucracy research to identify how representation (beyond the demand side perspective offered by Thielemann and Stewart) could influence the implementation of HIV/AIDs policies.

IV. Economics

What are the economic policy implications—in terms of quantity and price—of illegal drug control policies in the U.S. that target the supply versus demand side of the market, especially when consumers (drug users) are relatively unresponsive to prices?

BACKGROUND: A National Academies of Sciences report separately describes the potential impact of supply side and demand side policies. Examples of supply side policies include aggressive law enforcement prosecutions and police activity, and seizures directed against drug dealers and suppliers. Examples of demand policies include drug addition treatment facilities, and education programs targeted to K-12 students.

In a neo-classical supply-demand framework, show (in two separate supply-demand figures) the likely impact of supply-side and demand-side policies on the price and quantity of illegal drugs. Discuss and compare the implications and effectiveness of supply versus demand-side policy interventions. What solution do you recommend, demand-side or supply-side policies? Defend your solution. In your discussion, refer to prices, quantities, and revenues.