

Problem Set 3
11.126/11.249/14.48
Due April 24, 2007 in class

I. Class Size: Hanushek vs. Krueger (20 points)

Hanushek's literature review on the effects of class size suggests that there is no strong association between class sizes and test scores in the United States. Table 6 shows that across many (non-experimental) studies, small classes are associated with lower test scores as often as higher test scores. Table 7 shows that the same result holds for the relationship between class size and a student's *improvement* in test score over the course of the year. On the other hand, Krueger's paper on the Tennessee STAR experiment found large gains from small class sizes.

1. (10 points) Suppose that small class sizes really do have a substantial effect on student achievement, i.e., Krueger is right. How might you explain the patterns summarized by Hanushek?
2. (10 points) Now suppose that small class sizes don't have a very strong effect on achievement (on average), i.e., Hanushek is right. How might you explain the findings of the STAR experiment if the average effect of class size is negligible?

II. Vouchers and School Choice (25 points)

In the readings on school choice and in our discussions in class, the focus has always been on the effect of allowing a small number of children to enroll in the school of their choice (or their parents' choice). That is, we are looking at the effect of school choice on an individual student, holding the school system as a whole approximately constant. Imagine implementing a voucher program nation wide. Write a short essay discussing the additional effects such a program might have, effects that are not captured by small scale experimental studies. Do these effects make you more or less inclined to support a national voucher program?

III. Incentive and Accountability Systems (25 points)

1. (10 points) In 1996, Chicago Public Schools instituted an accountability reform. An important element of the reform was to put poorly-performing schools on probation. Probation means that the school loses some of its autonomy, and if it fails to improve staff can be dismissed or reassigned to other institutions; it is something that teachers and administrators would strongly like to avoid. The rule is that a school goes on probation if fewer than 15% of its students perform at or above national norms (the national median) on a reading test, with students in Special Education programs omitted from the calculation. Discuss some of the "perverse" incentives of

this program, i.e., incentives that were probably not intended by the program designers. (I see four perverse effects.)

2. (15 points) Suppose you are designing an incentive system for schools based on their test scores. You can base your incentive scheme on one of three measures: a) the raw average of test scores in a school (normed to the population at large); b) a school's change in average test score compared to the same school's score last year; or c) a school's average test score minus the school's "predicted" score, where the predicted score comes from a regression of test scores on student Socio-Economic Status, race, and other similar measures. Discuss the advantages and disadvantages of each option.

IV. Policy Brief (30 points)

You are an education aid to Janet Napolitano, Governor of Arizona. Napolitano is a moderate Democrat who respects both the government and markets. She believes strongly that Arizona's future depends on improving the quality of the state's K-12 education. She is considering proposing either a demonstration voucher program (which could include private schools) or a demonstration public school open enrollment program. She has not yet decided on the size of the program and she is still considering whether it should be run in one location or multiple locations. Before she makes these decisions, she wants to better understand what such a program might accomplish.

Earlier today, the governor called you into her office and asked you to write a short policy brief (approximately 600 words), based upon your reading, which summarizes what existing studies say about the effectiveness of a voucher program or an open enrollment program in raising student achievement and in improving school quality. If existing studies contain important lessons about how to design a demonstration, you should briefly include those lessons as well.