

SYRACUSE UNIVERSITY
The Maxwell School of Citizenship and Public Affairs

PPA 810

Ph.D. Seminar: Public Finance

Spring 2011

Professor Yinger

Final Exam

This is a closed-book, take-home exam. You have three hours to complete it. More specifically, you must return the exam within three hours of receiving it (by e-mail or as a hard copy). A grade penalty will be imposed on exams that are not returned within this deadline.

The purpose of this exam is to test your skills as a public finance scholar. Focus on presenting the conceptual foundations of and the methodological approaches to the various questions. You should cite key studies in the literature when possible, but it is better to provide a complete conceptual and methodological answer than to worry about remembering every citation.

You must answer any 2 of the following 5 questions.

1. Taxes, Spending, and Economic Development

Tax rates and government programs obviously both affect local economic development. Nevertheless, some people say that the best way to promote economic development is to cut taxes and others say that the best way is to provide key public services, such as infrastructure. Your job is to review some of the literature that considers the impact on economic development of both taxes and spending and to devise your own study (which could build on an existing study) on this topic.

2. Value-Added Production Functions

Value-added methods for studying education production functions have received a great deal of attention lately, and the XYZ Foundation has commissioned a series of studies on

the topic. You have been given access to student performance data (combined with detailed information on student and teacher characteristics) over a number of years in New York State for 3rd through 6th grade (this is just an exam question, not reality!) and have been asked to design a value-added study using those data. Your job is to explain the key choices that confront a scholar in estimating the impact of various teacher and student characteristics on value added. Describe some of the alternative approaches to this problem, and identify the approach that you believe would be the best. Explain and defend your choice.

3. **School Quality Capitalization**

One of your colleagues has obtained a detailed data set on sales prices, housing characteristics, and neighborhood characteristics (including school quality) for all the house sales in a large metropolitan area over three-year period. He has estimated a regression with the log of sales price as the dependent variable and average elementary passing rates on state math and English tests for the associated school district as an explanatory variable. His regression also includes a wide range of housing characteristics and other neighborhood characteristics. He finds that an increase of 10 percentage points in this test score variable leads to a statistically significant 5 percent increase in house values. He knows that you have through about this topic at length, so he has asked you to be his co-author and you have agreed. You have decided to start by writing a memo to your colleague about the conceptual and methodological issues that need to be considered when estimating school quality capitalization. Your job for this question is to draft this memo.

4. **Homestead Exemptions**

A legislature in your state wants to implement a general homestead exemption for the school property tax. She is considering three designs: a required homestead exemption (the first $\$X$ of market value) that is not paid for by the state; a standard homestead exemption (also the first $\$X$ of market value) that is paid for through state funds, and an adjusted state-funded homestead exemption that is set at $\$X$ of market value but valued at the property tax rate in the average school district, not the property tax rate in a homeowner's school district. Let t_i be the property tax rate in district i . Then under the second plan, district i receives $t_i X$ from the state for each homeowner. Under the second plan, district i receives $\bar{t} X$ from the state for each homeowner. As an expert in local public finance, you have been asked to provide an analysis of

these three plans. Will they provide the same relief to homeowners? Will they have the same impact on school district outcomes, such as tax rates, spending levels, and student performance? In answering this question, you should, to the extent possible, draw on relevant academic research.

5. **Consolidation of Fire Departments?**

A recent article in the *Syracuse Post-Standard* begins:

A consultant hired to study fire and emergency services in eastern Onondaga County has recommended merging four fire departments into one fire district to save money and improve service.

The consultant says the single fire district would handle administrative, operational and financial duties for four fire departments in the town of Manlius: the Minoa, Kirkville, Fayetteville and Manlius departments.

If the merger goes forward, it would be a landmark move in Central New York, according to local and state officials.

Consolidation of fire departments has been talked about for years, but there have been no townwide fire districts set up like the one that being proposed, said Travis Glazier, Onondaga County's director of intergovernmental relations.

Onondaga County Executive Joanie Mahoney has said that taxpayers can no longer afford 57 fire departments, and has said consolidation must be considered to save money and increase efficiency.

Merging volunteer fire departments is also rare statewide. Since 1972, only 50 of the state's 1,857 departments have consolidated or gone out of business. Over those years, however, another 32 new departments started. The last merger was in North Greenbush near Albany in January 2010.

The Manlius/Pompey study, conducted by RFG Fire Rescue Consulting of Canton, Ga., said the merger into one district would save taxpayers money and improve services to residents.

The departments could save money by buying in bulk and negotiating discounts, not buying duplicate equipment and gear, and cutting administrative costs, said Ron Graner, who completed the study.

You have been given a grant to study the potential cost savings from fire-district consolidation in New York State. Explain your conceptual framework, the data you would need, and the methods you would use. Whenever possible, link your discussion to the issues raised in this article.