Case Tatro

Department of Economics

Binghamton University (SUNY Binghamton)

Citizenship: USA

Phone: (+1) 321-222-8084

E-mail: ctatro1@binghamton.edu

www.casetatro.com

Research Statement

I am an applied microeconomist. I primarily work in the economics of education, but I also work on topics in experimental, labor, health, and enviromental economics.

My job market paper, **Should Value-Added Models Weight All Students Equally**, proposes a way to improve the way teachers are evaluated. The common current approach is to use so-called value-added models in which a regression model is used to predict students' test scores. Value-added is calculated as the average of the difference between the actual and predicted test scores across students in a teacher's class (typically with a Bayesian shrinkage adjustment). These models are supported by a literature that finds value-added estimates are unbiased (i.e. teachers are not rewarded simply for having better students). Also, test-score value-added measures are predictive of a teacher's impact on long-run outcomes such as high school graduation, college quality, teen pregnancy, and adult earnings.

The approach I propose is to use a weighted average of the difference between actual and predicted test scores across students in a particular class. A weighted average makes sense from a theoretical standpoint if the goal of value-added measures is to assess teacher quality on long-run outcomes using test scores. If, for example, the lower-achieving students are more at risk of not graduating high school, than a test-score value-added that places a higher weight on lower-achieving students may be more informative because those students are the ones at risk.

I find that the highest-achieving students receive the highest weights in such a weighted value-added measure. These differences in weights are only partially explained by efficiency concerns related to the fact that the highest-achieving students have the most predictable test scores. Even if I try to predict a teacher's estimated effect on high school graduation for the lowest-achieving student using a teacher's effects on test scores, the highest-achieving students receive the highest weights. This suggests that value-added for the high-achieving students proxies for underlying traits of teachers which are particularly important for promoting high school graduation.

I have two papers that study how the partisanship breakdown of the state electorate affects outcomes in that particular state. First, in **Is the mortality gap between red and blue states**

caused by government? (with Jijee Bhattarai and David Slichter), we note that a popular fact is that so-called red states (states that vote Republican in presidential elections) have a higher mortality rate that so-called blue states (states that vote Democrat in presidential elections). We use an instrumental variable and border county approach to ask to what extent is this difference in mortality rates caused by something state governments are doing. Our findings rule out that state policy is the predominant explanation for this difference. Nonetheless, our estimates are most consistent with the conclusion that some of this difference is due to differences in state policies. We find about 10% to 20% of the red-blue difference in mortality rate is caused by policy differences.

In a second paper, **Is the Achievement Gap Between Red and Blue States Caused by Government**, I first highlight that Democrats are often associated with stronger support for education compared to Republicans. Students in blue states also score higher on standardized test scores in grades 3-8 than students in red states. I therefore ask if these red-blue differences in standardized test scores in grades 3-8 are caused by differences in education policy between red and blue states. Using the same econometric approaches, I find precise zero effects for the causal impact of state governments on student test scores. The highest plausible effect sizes based on my estimates imply the causal impact of state governments on student achievement is not more than a few hundredths of a standard deviation.

I also work in experimental economics. In **The Effects of Accountable Advice** (with Ozlem Tonguc), we examine settings in which a decision maker chooses an action after receiving advice from a third party. This action directly impacts someone else. Consider a CEO of a firm who has hired a consulting agency in order to provide advice on how to improve the firm's profits. The firm can either sharply reduce employee pay, sharply reduce CEO pay, or nominal reduce both employee and CEO pay. The CEO must choose one of three two options in order to remain in business. It is well-established in the advised-decision-making literature that the presence of an advisor allows the CEO to deflect blame for choosing an "unfair" action (i.e. sharply reducing employee pay) when the employee is able to punish the CEO for the action taken. An open question in this literature, however, is if also allowing the employee to punish the consulting agency for the advice given to the CEO will change the advice given to the CEO and ultimately the action the CEO takes. We find, using a laboratory experiment, that such accountable advice decreases the probability of the decision maker choosing an unfair action and the probability of the advisor recommending that the decision maker take an unfair action.

In the future, I expect to work on further ideas relating to evaluating teachers. I also want to work on issues relating to the teaching and learning of economics. A work-in-progress (with Ajinkya Keskar, Ozlem Tonguc, and Hammad Shaikh) is related to student learning and Generative

AI (AI). Students often use AI as a substitute for learning, rather than as a complement to improve understanding. We plan to evaluate if giving students training on how to use AI as a complement to course materials will improve student learning and the probability students use AI as a complement rather than substitute for learning.