

Research Statement – Christopher Paul Steiner

Currently, I am working on finishing and submitting three papers from my dissertation. These papers examine three different applied microeconomic problems, and they require data analyses for the unusual complexities in their particular markets. For instance, my fisheries paper accounts for sellouts in random utility models. One reason that I am interested in environmental economics in particular is that these complexities are prevalent – through, for instance, externalities. However, my research is broad enough to include other areas: I am finishing a paper with Richard Carson and Melissa Famulari which explores reallocations of funds across a university.

My fisheries paper, “Hitting Capacity: Implications for Outdoor Recreation Valuation,” looks at the market for Consumer Passenger Fishing Vessels (CPFV). These vessels, which travel offshore on recreational fishing trips, often board full. Since latter customers cannot choose the sold-out vessels, these vessels are not in the choice set for a fraction of the customers. If this is unobserved in the data, estimating willingness to pay (WTP) using a random utility model (RUM) and aggregate data will lead to biased estimates. However, fisheries management still needs valuations for WTP in these environmental markets. We reduce this bias by introducing a first-stage probability model for selling out and then estimating the WTP parameters based on the most likely choice sets.

The estimates for WTP for trips that target highly valued species change significantly when we adjust for sellouts. Sellouts occur frequently enough in a variety of settings to be a concern to economists in the recreation literature. However, studies have not looked at sellouts as a challenge to the standard WTP framework in the recreational context. This paper heeds the warnings from the marketing literature, which has explored the impact of stock-out events in supermarkets.

James Hilger (NOAA) and I are currently working on submission of this paper to an environmental field journal. It was presented at the AERE Meetings, San Diego, 2015.

My second paper, “Pollution Whack-a-Mole: Ambient Acetaldehyde and the Introduction of E-10 Gasoline in the Northeast” explores the transition to E-10 ethanol-enhanced (10%) gasoline in the Northeastern United States. The policy changes were complicated and state-by-state, but prior to the introduction of E-10, oil companies used another chemical, methyl tertiary-butyl ether (MTBE), to comply with various gasoline environmental laws. Ultimately, MTBE was found to leak into groundwater, so states and oil companies phased out the chemical. I find that by stamping out MTBE in the northeast and substituting ethanol, acetaldehyde air pollution – a potential carcinogen – increased by a small amount. I value the acetaldehyde pollution in the low millions of dollars annually, much lower than the cleanup costs from groundwater pollution.

I am co-authoring (with Melissa Famulari and Richard Carson) a paper about the dynamics of undergraduate students at a university. We simulate a three-department university where students care about per-student funding in each department – among other characteristics – and they choose majors based off of the funding and characteristics. The administration cares about each department in a weighted fashion (we use CES-style utility). The university administration problem shows that, in order to determine per-student funding, one must take into account the utility of students. Once per-student funding is raised in any department, more students will come into the major – taking up funds. This disincentivizes universities from giving large amounts of per-student funding in departments with other attractive characteristics. This leads to popular majors having lower per-student funding.

We then analyze funding data from UC San Diego. We provide an instructional cost per credit hour delivered in each department and demonstrate how this should be calculated. We find that departments with

higher number of graduates are cheaper per degree, have higher modified student-to-faculty ratios, and graduate students more quickly than smaller departments – consistent with the model.

My research will continue in applied microeconomics. In environmental economics, I am interested in both continuing my work in fisheries and exploring new data. I attended a Deep Sea Fisheries Seminar Course at UC San Diego, and I would like to develop ideas to answer questions about deep sea mining. Outside of fisheries, I am in the idea phase of utilizing small court claims data from Illinois to determine whether or not weather impacts small claims court filings. After submission of these articles, I hope to begin a few papers before moving institutions. Furthermore, if I work in an academic setting, I would like to continue working in education through research on student outcomes in the classroom. I am thrilled to be using this year at Penn State to begin publication of my dissertation, and I hope to bring fresh ideas to any institution I will work at next year.