

# Research Statement

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I am an applied microeconomist (and statistician) with interests and experience related to the temporal and spatial aspect of economic questions. My research focuses on a variety of topics, from behavioral economics to housing and real estate. As of late, a good portion of my research has incorporated the transportation network in addressing these important areas. In general, my research is empirical and tends to be computationally intensive.

## DISSERTATION

Each chapter of my dissertation touches both temporal and spatial components. The first chapter (my job market paper) explores whether or not reference points (from cumulative prospect theory) are updated within periods, i.e., after a choice is made, but before the outcome is realized. Transportation data is used to answer this question. Drivers choose a route and leave for a destination, but don't fully realize the outcome until final arrival at their respective destinations. Much of the literature considers prospect theory in the context of completed trials or one-shot decisions. This is the first paper to consider within-period reference point dynamics. I find that reference points do in fact change after the choice is made, but before the realized outcome. Particularly, reference points tend to change near the endpoints of travel.

Chapter 2 seeks to determine whether or not the documented positive skew in route travel-time distributions is a statistically significant predictor of the preferred route chosen by drivers. Measuring route reliability has been a difficult undertaking, as no one measure has been widely accepted. While the variance of route travel time along with the average travel time have been the de facto measures of route reliability, I include an additional measure of reliability that has been proposed in the literature: the skewness of route travel time. This distributional characteristic is not found to be significant; however, the variance and average travel time are confirmed to be influential.

In chapter 3, I explore the link between the economy and voting preferences in presidential elections. The link between the economy and politics has been studied extensively. In this paper, I look at how the rise and fall of housing prices affect the proportion of votes for the presidential nominees of the 2-largest parties in the U.S. After controlling for a variety of demographic and economic variables, I am able to find (at the county level) that changes in housing prices do have an affect the proportion of votes received by the Democratic and Republican nominees using data from the past 5 presidential elections. Specifically, when housing prices rise, voters prefer the Democratic candidate.

## ADDITIONAL RESEARCH

To fulfill the capstone requirement for the M.S. in Statistics, I investigated price diffusion across significant geographic boundaries using vector autoregressive models. Regions are constructed such that the boundaries between them are more substantive (i.e., mountains) than arbitrary political lines. In general, the results are consistent across all models proposed. However, due to small sample size and p-values on the boundary, the null hypothesis is only weakly rejected. That is, housing prices in Western Washington "weakly" Granger-cause housing prices in Eastern Washington.

As part of my funding during graduate school, I have been privileged to work on a variety of policy-oriented grants. These projects include topics such as short-line railroads, commodity flows in the Pacific Northwest, and the social cost of rail freight diversion. I am currently working on a railroad container availability study, funded by the USDA. While these reports and studies lie outside the scope of top journals in economics, I have been fortunate to glean a number of skills that supplement my own research.

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## **FUTURE RESEARCH**

There are a few streams of research the I am interested in pursuing. First and foremost is a further understanding of the nuances of prospect theory, specifically as they relate to the reference point. Reference points have seen a lot of attention through the years, but within-period reference point dynamics is ripe for further analysis. Additionally, reference point dynamics can be measured with a multitude of datasets from a variety of industries.

I also hope to explore topics unrelated to my dissertation. One such topic is the cost of education. Much attention as been devoted to the rising cost of education, but little has been devoted to another important aspect of college affordability: room and board. Similar to the rise of tuition, housing costs have also outpaced inflation over the years. How do housing costs in college towns compare to their more urbanized counterparts? Is there a link between housing costs and financial aid? These are a few questions that may have promising answers.

I am excited to continue in these research endeavors and advance the frontier of our understanding of choice-making in a variety of fields and settings.