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Research Statement

I am a PhD and job-market candidate in Economics at the University of Tennessee, Knoxville. My specializations are in public economics, the economics of natural disasters, and political economy. During my graduate education, I have developed applications of satellite nighttime light imagery data to analyze economic problems. Several well published papers show a high positive correlation between nighttime light intensity and gross domestic product at national and local levels. My current research focuses on the impact of natural disasters and political alignment using night-time light intensity data.

In my job-market paper, I analyze the impact of large natural disasters (i.e., earthquakes, floods, and storms) on economic activity. Theories in macroeconomics do not have a clear answer the regarding the effects of natural disasters on economic growth. Some theories predict no impact; other theories predict a negative impact, while still others predict a positive impact on economic activity. One of the problems in the empirical literature on this topic is not having a proper counterfactual (i.e., not knowing what would happen to economic activity if there were no natural disasters). To overcome this problem, I utilized synthetic control identification. Specifically, I used nighttime light intensity data as a proxy for economic activity in a region when analyzing the impact of natural disasters. Developing and underdeveloped countries are not easy subjects for researchers to analyze. National data is either unavailable or unreliable. Subnational analysis is even more challenging for the same reasons. Using night time light intensity data allowed me to overcome this difficulty. Using three large earthquakes in my dataset, I found that brightness of nighttime light increases as the distance from the epicenter decreases after the earthquake. Another important finding in my research is that, on average, the largest natural disasters have a short-lived positive impact on nationwide economic activity. However, this small but positive impact vanishes four to five years after a natural disaster. This result can be due to the fact that after a natural disaster, countries invest in recovery and rebuilding activities around the natural disaster zone, thus creating more economic activity in the region for a limited period of time.

In my second research paper, using satellite data for Turkey, I have study whether political authority favors the region in which a political party won the previous mayoral election. When maximizing utility, political authority might have other preferences such as getting elected in future elections. Therefore, politicians might tend to favor some regions more than others if they think their position is not secure for the next election. Using nighttime light intensity in a region as a proxy for economic activity, I found that during a coalition government era (i.e., with more than one party forming the government) from 1998 to 2003, cities whose mayor was a member of one of the political parties in power experienced more economic activity. By contrast, cities whose mayor was a member of the political party in power experienced relatively less economic activity during the nation's one-party government era from 2005 to 2012. Therefore, I found evidence of political favoritism during a coalition government era but not during a one-party government era in Turkey.

In my future research, I would like to continue to use imagery data, which are advantageous when economic indicators are insufficient or unavailable. To give one example, I believe that satellite

data can be used to assess whether there are economic advantages to being near a time zone boundary. I also want to continue the work I developed in my experimental course on auction theory, testing whether sequential or simultaneous auction mechanisms are superior in creating profits for sellers. In another project, I examined the literature about the relationship between crime and religiosity. While earlier literature offers evidence of a negative relationship between religiosity and crime, recent works using new empirical techniques provide evidence of a positive relationship. I want to use Turkey's lottery application for selecting pilgrims to visit Saudi Arabia in order to identify the relationship between religiosity and crime.