

I am an applied microeconomist with a focus on Public, Health, and Development Economics. My research agenda is motivated by my experience in the Ministry of Finance in Mexico, where I worked for over four years assessing the impact of fiscal policies and following up payments to social programs. This experience helped me develop a practical perspective on how public policies work and made issues related to public policy, especially those related to health, concern me deeply. I am interested in studying the interplay of public policies on different health outcomes. My work also explores topics related to labor and crime.

My dissertation, “Essays in Applied Microeconomics on Mexico”, is a collection of three essays analyzing how policy differences across geographic space affect health and labor related outcomes. My job market paper, “Fighting Against Hunger: A Country-Wide Intervention and its Impact on Birth Outcomes”, estimates the impact of a food assistance policy implemented in Mexico in 2013 on birth weight and other birth related outcomes. This national policy is a broad targeting and coordination strategy involving a large set of programs from several ministries aiming to fight hunger. I use a difference in difference approach exploiting timing and regional variations in exposure to evaluate the impact of the overall program on birthweight. Since municipalities were not randomly assigned, linear regression methodologies may lead to biased estimates. In order to address these concerns and obtain causal estimates, I employ a multiperiod difference-in-difference matching method proposed by Imai, Kim and Wang (2019), which compares each treated unit to a control unit constructed to be similar to the treated observation in terms of outcome and covariate histories.¹ This process is a generalization of the synthetic control method proposed by Abadie, Diamond and Hainmueller (2010).² I find that exposure to the program has a moderate impact on birthweight. My preferred specification indicates SH increases weight at birth by 5 grams. Studying the effect of the program on the poorest municipalities, the set of municipalities first treated by SH, shows slightly larger results, of at most 10 grams, although only in the longer-term.

The second paper in my dissertation is titled “Military Interventions and Obesity: Evidence from Mexico’s Drug War.” In this working paper, I examine if exposure to military operations against the drug trafficking organizations in Mexico caused any changes in weight-related outcomes using the number of operations from military records and longitudinal data from the Mexican Family Life Survey (MXFLS). My hypothesis is that these policies and the subsequent violence triggered, affected weight-related outcomes by inducing stress as well as by affecting food consumption and physical activity behaviors. I estimate a generalized difference in difference model that exploits the presumably exogenous regional variations in the number of military operations while controlling for selective migration. My results indicate that military operations affect weight positively, increasing overweight although not to the extent of inducing obesity. Using a score designed to diagnose depression I provide evidence that emotional well-being affections may lead these effects. Exploring other potential mechanisms, I cannot rule out that food expenditures and reductions in physical activity are potential drivers, but estimates are mostly insignificant. Therefore, observed changes may originate in metabolism alterations due to stress.

The third paper in my dissertation, “Will Violent Crime Incentivize the Hiding of Small Firms?”, examines the relationship between exposure to violent crime and firm informality. I employ a rotating panel survey matched to municipal homicide rates and temperature as an instrument for homicide rates and find that exposure to violent crime causes existing firms to

¹ Imai, K., Kim, I.S. and Wang, E., 2019. Matching Methods for Causal Inference with Time-Series Cross-Sectional Data.

² Abadie, A., Diamond, A. and Hainmueller, J., 2010. Synthetic control methods for comparative case studies: Estimating the effect of California’s tobacco control program. *Journal of the American statistical Association*, 105(490), pp.493-505.

become informal. My hypothesis is that losses derived from crime may take away income that could otherwise be used to afford formality. Also, firms may prefer to stay underground to avoid disclosing their existence to criminals. I find that exposure to violent crime promotes informality. On average an additional homicide per 10,000 people each quarter increases the probability to be informal between 0.6 percentage points and 1.1 percentage points. These results are further corroborated when using temperature as an instrumental variable, which indicates that these estimates range between 13.7 percentage points and 17.3 percentage points.

Prior to joining the Ph.D. program, I was published on *The Mexican Journal of Economics and Finance REMEF*, a peer-reviewed journal from Mexico, for my paper titled “Estimation of the potential revenue in the taxes on labor and capital income: a comparison between Mexico and the United States.” In this paper, using a general equilibrium model, I estimated the maximum revenue that Mexico and the United States could achieve by varying their taxes on labor and capital. My results indicate that both countries could raise more revenue in the long run by reducing the tax on capital and increasing the tax on labor than by raising both.

Outside of my dissertation, I am working on a selection of two projects. The first of these refers to a series of papers related to *Seguro Popular* (SP). SP is a universal coverage initiative started in 2002 in Mexico that offers public insurance to all citizens. The first paper in this series estimates the effect of SP on health-related outcomes and risky behaviors like smoking and drinking. While there is some research based on the state by year level rollout, my work relies on pairing observations from the Mexican Family Life Survey (MXFLS) panel dataset using the month and municipality of interview to rollout data by quarter and municipality. The second paper is motivated by the fact that at the beginning of 2015 there were important budget adjustments that reduced the universal insurance coverage in Mexico. In this second paper, I want to explore the effects that the unenrollment from SP, caused by these cuts, had on birth-related outcomes and mortality rates. The third paper aims to explore the impact of these cuts on informality prevalence. Since it has been argued that SP reduces incentives for employers to formally hire employees, they can hire them informally relying on SP and not providing health insurance, I want to explore if this relationship holds when reducing access. The second project I am working on refers to the effect of pictograms on cigarettes packs and their effect on health outcomes. Starting in 2010, tobacco companies in Mexico were mandated to show different messages related to the risks of smoking during different months of the year for different years. Within this project, my first paper will examine if seasonal exposure to pictograms that warn about the dangers of smoking during pregnancy has a positive impact on birth related outcomes using information on the exact time pictograms are released and data on birth records. In my second paper I want to investigate if emergency room visits linked to respiratory problems of newborns and pregnant women are affected by such seasonal exposure to warnings in cigarette packs.

In the future, I plan to continue studying the effects of other public policies that affect health-related outcomes. My prior experience and close contact with former colleagues from Mexico are a continuous source of inspiration and resources to do research that I would like to continue taking advantage of. However, I would like to also expand my research agenda towards other countries. I intend to branch out and investigate topics related to the relationship between immigration status and health in the US. As a Hispanic, an underrepresented population in economics and the social sciences, I will contribute to the public policy and economics community through my research and unique perspective on issues that affect human health and well-being.