Research Statement

I work in Labor Economics, at the intersection with Macro and Public. My research has focused in answering policy questions related to early childhood development, health economics, as well as addressing the methodological challenges that arise when trying to answer such policy questions.

In my Job Market Paper "The equilibrium effects of state-mandated minimum staff-to-child ratios", I study the impact of mandatory-minimum staff-to-child ratios on the distribution of children's skills. Mandatory-minimum staff-to-child ratios are a widespread regulation in the United States, but their impact on the skills of children are not well understood. This is probably due to the fact that answering questions about how the skill distribution of children changes in response to state-level regulations requires a dataset with detailed information for many children in each state. Such data is not available to the best of my knowledge. In order to fill this gap, I build an equilibrium model of the childcare market in the US with rich family heterogeneity in which price of each level of quality and the distribution quality and quantity of childcare purchased in each state in the US changes endogenously with the regulation in that state. I find that increasing the stringency of mandatory-minimum ratios increases skills at most percentiles of the skill distribution for children born to two-parent families, but lowers it at the left tail of the skill distribution of children born to single-mothers. These effects on the overall distribution of skills hide large heterogeneity. Some children experience large skill gains from the increase in stringency, whereas others experience large skill losses. The children that experience large skill gains are, on average, children born to poor families with less substitution possibilities (less care by relatives available, less assets), whereas children that experience large skill losses are on average children born to poor families with more substitution possibilities (more care provided by relatives available, more assets).

In "Neighborhood segregation and endogenous racial bias" with Alessandra Fogli, Veronica Guerrieri, and Marta Prato (work in progress) we write an equilibrium model of residential choice and human capital formation in which the human capital of children depends on the location choice of their parents through a local spillover. In this model, long-run racial segregation arises from path dependence and initial wage gaps between white and black individuals, and not because of any inherent differences between these two groups. We use this model to examine the role of reparations and a scaled-up version of the moving to opportunity program in eliminating racial segregation and closing white-black wage gaps.

In the first of my third year papers "Identification and estimation of non-stationary hidden Markov models" I provide a constructive identification proof for the law of motion of a hidden Markov state and the conditional distribution of observables given that there are at least three conditionally independent noisy measures available of the hidden state. Importantly, even when the hidden state is not Markovian, the identification proof recovers the one period transition probabilities. Based on that identification proof, I propose two estimators that are faster to compute than Maximum Likelihood, and conduct Montecarlo experiments for both estimators.

In my second third year paper, "The impact of measurement error in health on health-related counterfactuals" with Luis Pérez, we estimate a canonical life-cycle model of savings and labor supply under two different assumptions: Under the first assumption, health is perfectly observable from survey responses as in most of the literature. Under the second assumption, health is not observable, but a battery of noisy measures of health are available. We find that ignoring measurement error leads us to dramatically underestimate the extent to which health affects labor supply and the persistence of health, which lead us to underestimate the lifetime

costs of bad health (as measured by earnings, hours worked, consumption, and assets) by as much as 300 %.

In the paper “An anchor-independent non-parametric test of dynamic-complementarities in the production of children's skills” with Joseph Mullins (work in progress), we note that the notion of dynamic complementarity , a widely used concept in the Human Capital Production Function literature, is problematic. In particular, a production function for skills may or may not exhibit dynamic complementarities depending on which outcome is used to “anchor” skills (for example, skills may be expressed in terms of their effect on future earnings or in terms of their effect on reducing future crime). We ask the question: Is there a stronger notion of dynamic complementarity that is anchor-independent? We provide an affirmative answer to that question and derive sufficient conditions for a production function of skills to exhibit dynamic complementarities when defined using this stronger notion. Then, we derive a non-parametric procedure to test for those sufficient conditions.

In the paper “Heterogeneous effects of divorce on children’s human capital” with Joseph Mullins (work in progress) we examine empirically the responses of children’s adult outcomes and parental investment by maternal education. We find that for most outcomes, divorce is associated with worse adult outcomes for children of educated mothers, but not for children of mothers without a high school degree. To rationalize those patterns, we write a dynamic collective model of parental investment with lack of commitment. In the model, mothers have a higher preference for investment in children than fathers. Upon divorce, total household resources drop but the relative importance of mothers in decision-making increases. The first effect dominates for children of educated mothers, and the second for children of less educated mothers. We are planning to use the model to examine the effects of different family policies on the skills of children and their future outcomes.

Going forward, I plan to study policy-relevant questions taking seriously individual-level heterogeneity, and I expect many of my projects to fall within the economics of early childhood development. In particular, I am planning to extend the model on my Job Market Paper to study the interactions between mandatory-minimum staff-to-child ratios and childcare subsidies and other public programs. I also think that modelling in more detail the careers of early childhood educators is likely to teach us something about the effectiveness of teacher-focused policies (training programs, training requirements etc.) on fostering early childhood development.