

DISSERTATION PROPOSAL

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“Three Essays on Dynamic Discrete Choice”

Thursday, December 2, 2021

3:00pm EST

Via [Zoom](#)

In this dissertation, I study labor and health choices and semiparametric estimation in the context of dynamic discrete choice models. Specifically, I study i) the opioid epidemic in the United States, ii) locally robust conditional choice probability estimation with short panels, and iii) life-cycle choices of labor supply, fertility, marriage, and homeownership in the United States.

In the first chapter, I propose to study the effect of labor market conditions and supply of opioids through prescriptions on opioid addiction. The paper will contribute to the literature on the opioid epidemic by estimating the preference to misuse opioid by using county-level variation of labor economic outcomes and supply of opioids via prescriptions based on dynamic discrete choice models with rational addiction. I plan to use restricted data from the National Survey on Drug Use and Health (NSDUH) from 2015 to 2020 conditional on successfully securing funding for access. After solving for the model, I aim to run counterfactual experiments to mitigate opioid misuse targeting susceptible groups to opioid misuse.

In the second chapter, coauthored with Professor Miller, I extend conditional choice probabilities estimation with short panels that exhibit finite dependence. This project extends Arcidiacono and Miller (2019, 2020) by i) dealing with multiple sets of sufficient number of finite dependence paths to identify structural parameters in discrete state space, ii) finding finite dependence paths in continuous state space, and iii) extending the estimator to be locally robust to the first-stage bias from nonparametric and/or machine-learning techniques. This paper incorporates a locally-robust generalized method of moments technique proposed by Chernozhukov et al. (working paper) to explore the statistical properties of the estimator. Monte Carlo studies for an individual optimization problem with a renewal choice and a quality ladder game are considered.

In the third chapter, coauthored with Professor Miller, I study secular changes in life-cycle labor supply, fertility, marriage, and homeownership. Adding to the works Khorunzhina and Miller (forthcoming) and Eckstein, Keane, and Lifshitz (2019), we incorporate single and married men's life-cycle decisions. We model that housing is shared local public goods when a single man marries and thus affects their outcome in marriage matching. Extending to Choo (2015), at every time period the marriage market is cleared given demographic types and homeownership. We use the Panel Study of Income Dynamics (PSID) from 1968 to 2019 to estimate our model. We propose to experiment with policies that are commonly used in emerging economies; i) subsidies for young couples when purchasing houses, ii) subsidies on childcare, and iii) paid-paternity leave.