Three Essays on Applied Microeconomics  
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My research projects use quantitative methods to answer questions in the intersection of industrial organization, health economics and marketing. My first stream of research projects focuses on understanding the mechanisms underlying consumers’ smoking decisions and choices of cigarette products, and how tobacco control policies affect smoking behavior and health development. My second ongoing research project studies the participation of lenders and borrowers on an online peer-to-peer lending market. We work with a model characterizing the expansion of the two-sided market with the presence of asymmetric information about borrowers’ types.

1 The Impact of E-Cigarette Policies on Product Switching and Cessation (Job Market Paper)

In this paper, I study the channels through which e-cigarettes impact smoking and cessation behaviors. I develop and estimate a dynamic model that characterizes smoking and choices of cigarette products, accounting for latent addiction and health as well as unobserved heterogeneous smoking preferences. I use a novel data set that contains detailed information on the usage of cigarette products and proxy measures for addiction and health. I adopt an estimation methodology that incorporates proxy measures to facilitate the recovery of the distribution of latent health and addiction as well as the transition rules of the latent states. My results suggest that e-cigarettes are less addictive than conventional cigarettes and can assist with cessation, while the relative health benefits associated with e-cigarettes tend to reduce cessation. Selection driven by heterogeneous smoking preferences plays an important role in explaining 79% to 85% of the cessation behaviors. Policy experiments show that a ban on e-cigarettes would increase the likelihood of cessation. A 90% e-cigarette tax and price regulation would increase cessation at a lower magnitude compared to a ban and decrease the usage of e-cigarettes. My results imply that e-cigarettes can benefit adult smokers when used as a healthier alternative for conventional smoking, but the health benefits of e-cigarettes can cause prolonged smoking and a reduced likelihood of cessation.

2 Youth Smoking under Subjective Expectations on the Addictive Effects of Smoking (In Progress)

A recent concern from the public health field is the increase in youth smoking. Such behavior arises potentially because the youth underestimate how addictive smoking can be when they pick up smoking at young ages, and once they become addicted, it is hard to quit afterward. Existing models of rational addiction assume that agents have full information about the evolution of addiction. This paper develops a dynamic finite horizon model for smoking and relaxes the rational addiction assumption by allowing the youth to hold subjective beliefs about the transition of addiction, which can be different from the transition estimated from the observed data. Following novel identification methodology, this paper separately identifies beliefs by leveraging on the stationarity of beliefs and preferences and the time-varying value functions, with the advantage of achieving identification with short periods of
data. Policies to provide information about the addictive effects of smoking to youth may help reduce smoking rates.

3 Courting Investors in Online Crowdlending Market with Jian Ni (In Progress)

Online peer-to-peer lending platforms attempt to provide services with lower transaction costs than traditional financial institutions, where lenders can earn higher returns while borrowers can borrow money at lower interest rates than they would receive from banks. However, loans issued on such platforms tend to suffer from severe asymmetric information, where lenders would have to make their own investment decisions based on project descriptions created by the borrowers, which often contain exaggerated or false advertising information. In such a two-sided market, decisions on the lenders’ side would in turn affect participation on the borrowers’ side. We study to what extent this asymmetric information between lender and borrower affects the expansion of the two-sided market.