

# Michael Irwin

## Office Address

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## Citizenship and Visa Status

U.S. Citizen

## Education

Ph.D. Economics, The Ohio State University, 2021 (expected)  
Dissertation: "The Macroeconomic Implications of Unsecured Consumer Credit and Default"  
Committee: Kyle Dempsey (co-chair), Aubhik Khan (co-chair), Julia Thomas  
M.A. Economics, The Ohio State University, 2016  
B.A. Economics, The University of Cincinnati, Summa Cum Laude, 2015

## Teaching and Research Fields

Primary fields: Macroeconomics  
Secondary fields: International Economics

## Research Papers

### "The Interaction of Unemployment Insurance with Credit and Bankruptcy Over the Business Cycle" (Job Market Paper)

I study the cyclical implications of unemployment insurance (UI) policies while quantifying the interaction of these benefits with unsecured consumer credit and default. Competitive credit can amplify the welfare gains from increases in UI benefits via improved terms of credit resulting from decreases in default behavior. However, the relationship is theoretically ambiguous because improved UI benefits can also substitute for credit use by households. To better understand this connection, I build an equilibrium model of labor markets and competitive credit markets calibrated to reflect the employment risk, credit use and bankruptcy behavior of US households. I first show that the majority of the volatility in credit and bankruptcy over the business cycle can be explained by aggregate fluctuations in extensive margin employment risk. I then find that the increased duration of UI benefits during the Great Recession prevented over a 1.1pp further drop in aggregate consumption. The improved benefits also prevented a much more severe drop in unsecured credit use. I show that abating the drop in unsecured credit use had a significant amplifying effect on the welfare gains from UI. The overall increase in welfare would have been over 27% smaller if the terms of credit adjusted so there was no change in credit use resulting from the policy.

### "Competitive Financial Intermediaries in the Market for Student Loans"

What are the implications of replacing the federal student loan program with competitive intermediaries that price loans based on the probability of default? I study this question using a quantitative, overlapping generations equilibrium model wherein households make a costly education decision with access to student loans. To measure the effectiveness of federal student loans, I remove the federal program and allow a competitive intermediary to replace it. The intermediary offers long-term loans where the price depends on the probability of default throughout the entire duration of the loan. I show there are significant losses to welfare and over a 24% decrease in the college educated population with competitive intermediaries. However, the intermediaries facilitate an increase in aggregate production. This increase is largely driven by a more efficient sorting of highly productive individuals to college education.

### **“A Method of Overlapping Endogenous Grids to Solve Problems with Non-Concavities”**

I develop a new method of solving problems where discrete choices create non-concavities in a continuous decision. The first-order condition does not guarantee a unique solution when there are non-concavities in the expected future value function. To alleviate this problem, I break the first-order condition into numerous concave regions. Each concave region will have a unique proxy solution. The algorithm yields a global solution by choosing the proxy solution with the highest utility. This method improves upon a previous modification of the endogenous grid method developed in Fella (2014). I generate significant gains in speed by avoiding a discrete grid-search method to check each point within the non-concave region. The method generates gains in accuracy by avoiding interpolation across a discrete jump in the decision rules. Finally, I apply the method of overlapping endogenous grids to a model with consumer default in equilibrium. I show that methods with a higher degree of accuracy will yield less default in equilibrium. As a solution method become more accurate it generates more utility from the savings decision associated with repaying debts, but it does not have a significant effect on the value of default where no continuous decision is made.

### **Research in Progress**

#### **“The Implications of Secular Trends in Student Loans and Credit Card Debt” with Heejeong Kim**

We study the implications of the secular growth in student loan debt and credit card debt for consumption smoothing and default behavior. An essential preliminary step is to better understand the relationship between student loan debt and credit card borrowing. Using the Survey of Consumer Finances (SCF), we show that among similar college graduates those with student loans are more likely to have positive credit card balances. Households with student loans also carry on average over \$2,000 higher balances on their credit cards. We then build a quantitative model that can replicate the levels of education, student borrowing, credit card debt and bankruptcy in the data. Future work will focus on matching the positive relationship between student loans and credit card debt, and we will use the model to measure the implications of the secular trends in unsecured consumer debt seen in the data.

### **Conference and Seminar Presentations**

Winter 2020

Concordia University

Winter 2020

Focusing on the first-year teaching conference

### **Professional Activities**

2018-2020

Graduate Studies Committee, Student Representative

### **Honors, Scholarships, and Fellowships**

2019, 2020

Graduate Associate Teaching Award

2018

Departmental Citation in Teaching Excellence

2015-2016

University Fellowship, Graduate School, Ohio State University

### **Teaching Experience**

Autumn 2017

Econ 2001, Ohio State, Independent Instructor

Spring 2019, 2020

Econ 8723, teaching assistant for Professor Kyle Dempsey

Autumn 2018, 2020

Econ 2002, teaching assistant

Autumn 2016, 2019

Econ 2001, teaching assistant

### **Programming Languages**

Fortran, Matlab, STATA, R, LaTeX

**References**

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