



October, 2016

To: RECRUITMENT COMMITTEE OR OFFICER

Re: Wisconsin Job Market Candidates for 2017 ECONOMICS Positions

Dear Colleagues:

I am enclosing a summary listing of our doctoral candidates who expect to receive their degree in 2017, and who seek positions that begin in the summer or fall of that year. Full vitae and additional information on each student are available from:

Jackie Utter,  
Placement Secretary  
Email: [jmutter@wisc.edu](mailto:jmutter@wisc.edu)  
7239 Social Science Bldg.  
University of Wisconsin-Madison  
1180 Observatory Drive  
Madison, Wisconsin 53706  
(608) 262-3559

Professor Jack Porter,  
Placement Director  
Email: [jrporter@ssc.wisc.edu](mailto:jrporter@ssc.wisc.edu)  
6448 Social Science Bldg.  
University of Wisconsin-Madison  
1180 Observatory Drive  
Madison, Wisconsin 53706  
(608) 263-3870

You can also find information about our job market candidates at our website:  
<http://econ.wisc.edu/phd-job-market-candidates.htm>

Our students plan to attend the American Economic Association meetings in Chicago, IL and interviews should be arranged with them directly.

Should you wish to come to Madison to interview, kindly provide Jackie Utter with a list of students you wish to see, the desired length of each interview, and the expected dates of your stay on campus.

Please email or call me for additional information on any of our students seeking positions.

Cordially,

Jack Porter  
Placement Director

University of Wisconsin 2016-17  
Listing of Candidates by Field  
X = Primary, O =Secondary

Candidate	Major Professor	References	Applied Microeconomics	Econometrics	Industrial Organization	International	Labor	Macroeconomics	Public	Theory	Other
Anderson, Drew	John Karl Scholz	Taber, Collins, Goldrick-Rab							X		O=Education Policy
Colas, Mark	John Kennan	Taber, Gregory					X		O		
Dempsey, Kyle	P. Dean Corbae	Quintin, Ready			O			X			O=Corporate Finance
Flynn, Zachary	Amit Gandhi	Sorensen, Hendricks		O	X						O=Energy Economics
Han, Joel Kaiyuan	Steven Durlauf	Taber, Gregory	O						X		O=Social Interactions
Hoffman, Brandon	Kenneth Hendricks	Sorensen			X						
Kim, Tae-hoon	Christopher Taber	Kennan, Walker					X		O		O=Health Economics O=Demographic Economics
Kuevibulvanich, Kanit	Kenneth West	Engel, Kelly, Eudey				O		X			O=Monetary Economics
Liu, Liyi	James Walker	Taber, Gregory, Burns	O						X		O=Health Economics
Qiu, Zichen	Alan Sorensen	Hendricks, Gandhi, Magnolfi			O					X	O=Applied Econometrics
Shaorshadze, Irina	Steven Durlauf	Seshadri, Taber					O		X		O=Applied Econometrics
Song, Wei	Xiaoxia Shi	Porter, Hansen, Kelly	O								X=Econometric Theory
Tan, Kegen Teng Kok	Steven Durlauf	Seshadri, Taber	X				O		O		
Walden, Emily	Alan Sorensen	Hendricks, Wolfe			X						O=Health Economics O=Antitrust
Wong, Woan Foong	L. Kamran Bilir	Staiger, Sorensen									X=International Trade
Xu, Duo (Josephine)	Alan Sorensen	Hendricks, Gandhi	O		X						
Yoder, Nathan	Marzena Rostek	Quint, Sandholm	O							X	O=Meta-Research
Zhang, Yi	Kenneth West	Engel, Chinn		O		O		O			X=Monetary Policy

**University of Wisconsin – Madison**  
**Department of Economics**

**NAME:** **Drew M. Anderson** Citizenship: United States

**Address:** University of Wisconsin-Madison Cell phone: (303) 503-7741  
L139C Education Building Work phone: (608) 890-0776  
1000 Bascom Mall E-mail: [dmanderson5@wisc.edu](mailto:dmanderson5@wisc.edu)  
Madison, WI 53706 <http://www.drewmanderson.com>

**Degrees:** Ph.D. Economics, University of Wisconsin-Madison, 2015  
M.S. Economics, University of Wisconsin-Madison, 2012  
B.A. Mathematics and Economics, Augustana College, 2007

**Dissertation Title:** “Essays in Public Economics”

**Abstract Summary:** My dissertation examines how public policies shape the financial decisions of firms and households. The first two chapters explore sources of private funding for higher education, how these interact with public policy, and how this affects decisions of both schools and students. The third chapter turns attention to the financial products households use to receive Social Security payments.

**References:** John Karl Scholz, [jkscholz@ls.wisc.edu](mailto:jkscholz@ls.wisc.edu) Christopher Taber, [ctaber@ssc.wisc.edu](mailto:ctaber@ssc.wisc.edu)  
J. Michael Collins, [jmcollins@wisc.edu](mailto:jmcollins@wisc.edu) Sara Goldrick-Rab, [sgr@temple.edu](mailto:sgr@temple.edu)

**Papers:** Using Multiple Discontinuities to Estimate Broad Effects of Public Need-based Aid for College. (Job market paper)  
The Impact of Electronic Payments for Vulnerable Consumers: Evidence from Social Security, with Alexander Strand and J. Michael Collins. Forthcoming in the *Journal of Consumer Affairs*.  
What Constitutes Prudent Spending from Private College Endowments? Evidence from Underwater Funds. Conditionally accepted at *Education Finance and Policy*.  
Aid After Enrollment: Impacts of a Statewide Grant Program at Public Two-year Colleges, with Sara Goldrick-Rab.  
Competing Methods of Informing Student Borrowers: A Randomized Field Experiment at a For-profit Online University, with J. Michael Collins and Sara Goldrick-Rab.  
Direct and Indirect Effects of Policies to Increase Kidney Donations.  
Can Knowledge Empower Women to Save More for Retirement? With J. Michael Collins.

**Employment:** Postdoctoral Researcher at University of Wisconsin-Madison, jointly at the Wisconsin HOPE Lab and the Center for Financial Security

**Teaching Experience:** Teaching Assistant at University of Wisconsin-Madison – Principles of Micro, Principles of Macro, Intermediate Macro  
Economics Department Teaching Assistant and Tutor at Augustana College

**Fields of Interest:** Public economics, education policy

**Drew M. Anderson**  
University of Wisconsin-Madison

**Using Multiple Discontinuities to Estimate Broad Effects of Public Need-based Aid for College, Drew M. Anderson (Job Market Paper)**

Among the many policy efforts to bring the benefits of college within reach of lower-income families, state-funded need-based grant aid is one of the largest expenditures that we know the least about. Beyond the efficacy of any one program, an overarching question is whether aid has a greater impact on students with greater financial need. Knowing the answer would provide a guide to targeting public funds to maximize their impact. This study is one of the first, and the largest, to estimate causal effects of grant aid at varying levels of financial need. This is made possible by discontinuities in multiple dimensions of eligibility for the Wisconsin Grant. Updated information will be available at: <http://sites.google.com/a/wisc.edu/dmanderson5/research/job-market-paper>

*Working papers on education policy:*

**What Constitutes Prudent Spending from Private College Endowments? Evidence from Underwater Funds, Drew M. Anderson.**

This study examines how private colleges and universities choose to spend versus reinvest resources in endowment funds that have suffered investment losses. The analysis takes advantage of a public policy shift that revealed how colleges define prudent spending. Investment losses during the financial crisis of 2008 left many endowment gift funds below their original donated values, or “underwater.” Colleges in some states were legally required to cut spending from underwater funds. Other states had recently enacted the Uniform Prudent Management of Institutional Funds Act, which allows prudent spending from underwater funds. A panel difference-in-difference approach shows that the Act loosened financial constraints, and affected colleges responded by spending 22 percent more from their endowments in the fiscal year following the financial crisis. Larger endowments responded most strongly to constraints, even though they are the most likely to have unrestricted endowment funds which could offset constrained spending from underwater funds.

**Aid After Enrollment: Impacts of a Statewide Grant Program at Public Two-year Colleges, Drew M. Anderson and Sara Goldrick-Rab.**

Most students who begin at community colleges do not finish with a degree. The net price of college commonly shifts after enrollment, and there is little evidence on how these shifts affect two-year degree completion. This study provides evidence on the impacts of a private program that offers supplemental grant aid to students with demonstrated financial need, who are already enrolled at public two-year colleges in Wisconsin. An evaluation using a randomized control group and data from over 5,000 students in multiple cohorts, fails to confirm substantial increases in persistence or degree completion caused by the grant program. We discuss barriers to effectiveness related to the size and delivery of the grant.

**Competing Methods of Informing Student Borrowers: A Randomized Field Experiment at a For-profit Online University, Drew M. Anderson, J. Michael Collins, and Sara Goldrick-Rab.**

The problem of student loan default is particularly acute at for-profit universities, where students are less likely to finish with degrees, take longer to do so, and where degrees have lower labor market returns. Given all this, rates of borrowing at for-profit universities still exceed national averages. Can default be reduced by better informing student borrowers? This study tests competing forms of loan counseling, which were assigned at random for one year to students enrolling online at DeVry University, a large for-profit institution. This study represents one of the only randomized field trials of student loan counseling. It is the only direct test of the widespread Department of Education counseling platform, which we compare to an alternative platform making use of simpler information delivery through short videos. There is little evidence of differential impacts on borrowing, major choice, grades, or early repayment between the two counseling platforms. There is some evidence of a reduction in early dropouts for students exposed to the alternative counseling platform. This finding is consistent with the alternative platform making more salient the investment value of education relative to its costs.



# Essays in Labor Economics

Dissertation Abstract

**Mark Colas**

University of Wisconsin-Madison

## **Dynamic Responses to Immigration**

This paper analyzes the dynamic effects of US immigration on worker outcomes by estimating an equilibrium model of local labor markets. The model incorporates multiple industries which combine capital, skilled and unskilled labor in production, and workers who choose their optimal industry and location each period as a dynamic discrete choice. I develop a novel estimation strategy which leverages differences in wages and labor supply quantities across local labor markets in the merged CPS Outgoing Rotation Groups to identify the key parameters of the model. Counterfactual simulations yield the following main results: (1) an economy responds to a sudden inflow of unskilled immigrants by expanding the sectors which extensively utilize unskilled labor; (2) an unskilled immigration inflow leads to an initial wage drop for unskilled workers which gradually subsides as a result of workers migrating and switching industries; (3) a gradual immigration inflow leads to significantly smaller effects on native wages than a sudden inflow of the same magnitude.

## **Heterogeneous Workers and Federal Income Taxes in a Spatial Equilibrium**

(with Kevin Hutchinson)

Progressive income taxes provide a disincentive for workers to live in high productivity local labor markets, potentially leading to a spatial misallocation of labor. To quantify these effects, we augment an empirical spatial equilibrium model (Diamond, 2015) to incorporate taxes and estimate it using Census data. Relative to previous work, we relax two key assumptions: (1) that workers are perfectly mobile and (2) that workers are homogeneous. These generalizations allow us to better quantify the impact of federal income taxes, as well as analyze the associated equity-efficiency trade-off, which has not previously been studied in a spatial context. We find that the optimal federal income tax code is substantially more progressive than the current tax code, i.e. that redistribution concerns outweigh the efficiency costs of income taxes in a spatial equilibrium.

## **Differential Tuition and College**

The practice of differential tuition, or allowing tuition to vary by college major, has become increasingly widespread since the early 1990s. While proponents believe that the policy increases efficiency by allowing tuition to better reflect the cost of and demand for majors, opponents argue that differential tuition will discourage borrowing constrained agents from majoring in high earning majors. In this paper, I construct and estimate a model to analyze how changes in major-specific tuition levels would affect college and major choice. I find that increasing tuition for Business and Engineering majors by 10% at public colleges decreases the number of agents in these majors at public schools by about 1%. Of these agents, about one third choose other majors at public colleges while the rest substitute into other colleges or enter the workforce directly.



# ESSAYS ON FINANCIAL CONTRACTING IN MACROECONOMICS

Dissertation Abstract

**KYLE P. DEMPSEY**

University of Wisconsin-Madison

## **Chapter 1: Safer Banks, Riskier Economy? Capital Requirements with Non-Bank Finance**

Firms obtain financing from two external sources: banks and non-banks. Banks are required to maintain a minimum capital to asset ratio, intended to help withstand distress and encourage safe lending; non-banks are not. When setting these capital requirements, regulators must balance the benefits of decreasing riskiness in the banking sector with the cost of reducing lending. In this paper, I show that the presence of the non-bank sector crucially changes both sides of this tradeoff. Specifically, tightening the capital requirement induces lending activity to shift out of the bank sector and into the non-bank sector. Since banks have a comparative advantage in monitoring borrowers to mitigate risk, the aggregate default risk in the economy rises even though bank loans become safer. On the other hand, the non-bank sector almost completely offsets the reduction in bank lending. After calibrating the model, I find that the welfare-maximizing capital requirement with both banks and non-banks is significantly higher than with banks only.

## **Chapter 2: Amplification of Financial Shocks through Committed Financing Contracts**

I explore theoretically and quantitatively how committed lines of credit extended by banks to non-financial firms amplify shocks to the financial sector, and the real impact of these shocks on the macro-economy. To explore this effect, I construct a model in which banks provide insurance to firms against credit rationing through lines of credit. For small shocks, credit lines smooth investment and the banking sector provides effective insurance with low ex post costs; with large shocks, however, firms draw down extensively. As a result, banks can experience significant losses that curtail lending in subsequent periods and prolong the downturn.

## **Chapter 3: A Theory of Credit Scoring and the Competitive Pricing of Default Risk**

*with Satyajit Chatterjee, Dean Corbae, and José-Víctor Ríos-Rull*

We provide a theory of the punishment that follows upon filing for bankruptcy. In our theory, households possess private information about their type and repaying one's debts enhances lenders' perception of a household being a good (i.e. creditworthy) type. A public recordkeeping of actions is used to learn about a household's type and, thus, its creditworthiness, and resembles very tightly a credit score. Episodes that lead to bankruptcy involve a deterioration of the credit score and the terms of credit. Our theory is capable of replicating the main features of unsecured credit in the U.S. using only a U.S. like legal system without any need of exogenous punishments upon defaults.





# **Market Structure and Plant Productivity**

Dissertation Abstract

**Zach Flynn**

University of Wisconsin--Madison

## **Chapter 1: Partial identification of power plant productivity, an unobserved input (job market paper)**

Traditionally, productivity, the part of output that is not a result of input use, is modeled as a plant-specific parameter. When productivity is not a parameter but an unobserved input choice, many production function identification arguments do not work; they assume something changes inputs but not productivity, but productivity is an input. I argue questions we want to ask presume productivity is an input because when productivity is a parameter, it is policy-invariant. Current methods that work when productivity is an input require that we make assumptions on how plants chose productivity and when they choose it, but we do not know even what productivity is so it is difficult to judge whether the assumptions are good or bad. I present a partial identification approach that makes few assumptions about how plants choose productivity, assuming only that productivity and input use are positively related. I show a class of economic models where the assumption I make is true and apply the method to study the effect of electricity restructuring on power plant productivity choice. Previous estimates of the productivity effect of restructuring used demand to instrument for productivity, but if productivity is a choice, then it is chosen on the basis of the power plant's demand curve, so demand is not an instrument. I find restructuring lowered fuel productivity but by less in larger states, that greater market size encourages greater productivity choice, and that restructuring re-allocated output to the more productive plants.

## **Chapter 2: Inference on functions of parameters partially identified by the intersection of countably many linear inequalities**

I develop a consistent estimator of bounds on functions of parameters partially identified by the intersection of countably many linear inequalities. Aside from allowing for an infinite number of constraints, an advantage of the estimator is that it can be used to compute a closed form confidence interval, without numerically inverting a hypothesis test. So it is easy to compute confidence intervals even if the number of parameters is very large, especially when we are interested in a linear function of parameters. (I use the estimator in my job market paper).

## **Chapter 3: Concentration and the depreciation rate of productivity**

I argue the depreciation rate of productivity is a key driver of industry structure and present empirical evidence that it is the case. When productivity depreciates slowly, early investments in productivity lower a plant's future cost curve, making it more difficult for potential firms to enter. I use economic theory to argue the lower bound on concentration is increasing as the depreciation rate of productivity decreases. I measure the depreciation rate of productivity using plant-level data for 74 industries in Chile and test the theory, finding it true.



# **Essays on Neighborhood Change and Parental Responses**

## Dissertation Abstract

**Joel Kaiyuan Han**  
University of Wisconsin-Madison

### **Chapter 1: Neighborhood Tipping by Race and Income**

This chapter extends the work of Card, Mas, and Rothstein (2008), who document empirical evidence of discontinuous changes in racial composition based on the initial minority share of the neighborhood. While neighborhood tipping could be driven by racial preferences, it is unclear whether income preferences could also be describing the same phenomenon. Using the method of Seo and Linton (2007), I estimate a model of neighborhood tipping that depends on an additive index of minority share and mean neighborhood income. I find substantial variation between cities in the relative importance of income to race. Furthermore, I find some variation in the sign of the weight on income. This reflects the dual nature of neighborhood income, on one hand, higher neighborhood income is associated with increased residential mobility, making richer neighborhoods more likely to tip in response to a minority influx. On the other, an influx of low-income neighbors may be undesirable to existing residents, which suggests that lower income neighborhoods should tip first.

### **Chapter 2: Patterns in Exit from a Declining Neighborhood: Evidence from Public Housing Closures in Chicago**

Neighborhood tipping is generally characterized as a non-linear or discontinuous change in aggregate neighborhood characteristics. However, most evidence of neighborhood tipping relies on discontinuities across thresholds. In this chapter, I use panel data on individual residents to examine patterns of neighborhood exit over time. Evidence on neighborhood tipping is gathered with two methods. The first is a descriptive analysis of nonlinearities and discontinuities in the hazard function for neighborhood exit. The second is the estimation of the effect of prior exit on the current likelihood of exit, similar to the study of adoption curves (Goolsbee and Klenow, 2002; Brock and Durlauf, 2010). Retrospective information on previous moves is used to control for heterogeneity in household residential mobility. In addition, neighborhood composition changes caused by public housing closures in Chicago is used to provide unanticipated variation in neighborhood quality. Finally, I also examine whether more concerned parents move out of a declining neighborhood faster.

### **Chapter 3 (Job Market Paper): Parental Involvement and Neighborhood Quality: Evidence from Public Housing Closures in Chicago**

This chapter studies whether, and how, parents respond to changing neighborhood quality by adjusting parental involvement. Empirical measurement of this response is complicated by neighborhood selection: unobserved changes in the family environment are likely to be correlated with changes in neighborhood quality. To deal with this endogeneity problem, I utilize a natural experiment: the mass closing of public housing projects in Chicago, which displaced public housing residents into various neighborhoods across Chicago. I estimate the effect of relocations by these displaced residents on families already living in the receiving neighborhood. I find that parents tend to increase the overall intensity of parental involvement as an immediate response to decreasing neighborhood quality. Additionally, I find that the direction of the response is different for parents with different initial involvement levels. Less-involved parents actually decrease parental involvement when neighborhoods deteriorate. This surprising reversal of direction has substantial implications on the structure of the parental decision problem, which are explored further in this paper. Overall, the results suggest that conventional estimates of neighborhood quality effects on child behavior may be understated. Furthermore, these results also suggest that policies targeting neighborhoods may have very different impact on resident children, due to parental mediation. Finally, the results also establish the impact of public housing closure policy on an unexpected population.



# **Comparing Direct-to-Consumer sales with Vertical Markets**

## Dissertation Abstract

**Brandon Hoffman**

University of Wisconsin – Madison

I study the impact of intermediate sales in vertical markets on consumer and producer welfare. Vertical markets can provide a number of benefits to both producer and consumer alike. However, double - marginalization is often seen as a problem for producers and consumers with vertical markets, whereby firms on different levels both have market power and thus are both able to charge a markup over cost. Contracts and implicit agreements can mitigate or lessen the negative externality associated with double - marginalization, but I develop a model to show that double-marginalization can actually be a good thing for producers, while simultaneously being bad for consumers.

In the first chapter, I develop a model with a single dimension on product differentiation and different levels of vertical markets. In this model, firms either sell to consumers or other firms. How far removed the manufacturer of the good is from the final consumer determines the number of vertical markets. In general, a market with one level consists of a manufacturer who sells directly to consumers, while a market with 2 levels consists of a manufacturer who sells to a reseller who in turn sells to consumers. I find that the profits of the manufacturer of the good can be up to three times as high when there are 2 levels instead of 1. Applying a simple solution to double-marginalization, allowing the manufacturer to set its price and the resellers price, is shown to actually make manufacturers worse off. An extension of the model shows that when a single manufacturer sells a product to multiple markets, it charges a weighted average of the prices it would charge in the markets it competes.

In the second chapter, I develop a quality choice competition model between two firms. The markup of high quality goods is generally higher than the low quality good, and this model seeks to reaffirm that. However, it also seeks to explain cases where the low quality good has the higher markup without changing the basic assumptions on cost and demand. Here I compare the equilibrium with two products and direct-to-consumer sales to one where two manufacturers choose the quality of the product they produce and the price they charge their reseller. I show that a market with manufacturers and resellers results in higher prices paid by consumers, greater profits for manufacturers, and a greater differentiation in quality choice. The results are shown to be similar when the firms compete simultaneously as when they compete sequentially. The results of this model are compared to a number of anecdotal examples of quality choice and movement timings and offer an explanation for the different equilibria seen both in model and anecdotally.

In the third chapter, I estimate the effect on sales of a billboard advertisement using a linear probability model. A quasi-experiment is utilized to estimate the effect of driving past a billboard advertisement had on sales of docks and boat lifts. The data consists of all consumer purchases of docks, boat lifts, and accessories from 2009-2016 on 3 lakes that represent roughly half of all sales. I control for differences among consumers through data gathered from property records. The property record data allows me to identify which consumers will drive past the billboard on the way to their waterfront property (if they do not live on the lake). The billboard was first made visible for the 2016 year, where only a portion of the roughly 1,200 homeowners drive by. Data from before the billboard installation is used to estimate trends and controls on consumer differences. Lastly, I create counterfactuals where the billboard is placed in different locations and visible to different potential consumers. This is done to address the concern over which billboard advertising location is optimal.



**Essays on banking and macroeconomics**  
Dissertation Abstract

**Akio Ino**  
University of Wisconsin-Madison

**Consolidations in the banking sector**

This paper builds a model of banking industry dynamics where banks engage in merger and acquisition activity endogenously. Mergers and Acquisitions are the most important source of the decline in the number of banks in the United States, so it is important to understand how mergers occur. Banks are either small or big, and when a small bank merges with another small bank, they become a big bank. The benefit of being a big bank is that the volatility of deposits is lower than that of small banks which is consistent with U.S. data and can be thought of as the benefit of geographic diversification. We assume that there is a search friction in the M&A market as in the work by David (2014) who studies nonfinancial firms. Banks randomly become an acquirer or a target, and negotiate how much the acquirer pays to the target when they match through Nash bargaining. In equilibrium, cash-rich banks will acquire cash-poor banks as in the data.

**A Simple DSGE Model of Banking Industry Dynamics (with Dean Corbae)**

The banking industry is characterized by countercyclical markups, incomplete passthrough of costs to prices, and procyclical entry and countercyclical exit. These characteristics are absent in most DSGE models with a competitive banking sector. In this paper we introduce imperfect competition and entry and exit in the banking sector into an otherwise standard DSGE model. There is a continuum of regions, and in each region there is a finite number of banks who Cournot compete in the loan market. Banks can enter into regional markets by paying a fixed cost and in the equilibrium the number of banks is determined by the zero profit condition of entrants. Since profits are procyclical, entry drops in recessions which decreases competition in the banking sector and amplifies countercyclical loan rate markups consistent with data. In recessions, this further reduces the investment, amplifying the recession. This provides a new amplification mechanism for business cycles which is not present in perfectly competitive loan markets.





# **Three Essays in Labor Economics**

## Dissertation Abstract

**Taehoon Kim**

University of Wisconsin-Madison

### **Chapter 1. The Changes of Educational Attainment and Wage Structure in South Korea, 1980-2014: A Dynamic General Equilibrium Approach**

This study explores the changes of educational attainment and wage structure in South Korea over the past 35 years and investigates the underlying mechanisms for explaining the changes. The distinctive feature of this study is that the demand for college education is distinguished from the actual acquisition of it. The Korean government has adopted the College Enrollment Quota Policy and the college quota has determined the actual number of college students in the situation that the number of college applicants has been much greater than the quota in most years. This study firstly replicates Katz and Murphy (1992) and Card and Lemieux (2001) using the Korean data and compares the results with those from the IV estimations exploiting the college quota as an exclusion restriction for college education. This study then develops and estimates two-sector-two-occupation overlapping generations heterogeneous agents model reflecting the IV regression results. The main feature of the College Enrollment Quota Policy is also embedded in the model. In the counterfactual experiments, the estimated model is used to evaluate (1) the relative importance of the underlying mechanisms-physical capital accumulation, skill-biased technical progress, factor-neutral sector specific technical progress and demographic changes for explaining the changes of labor market structure, to assess (2) the contribution of the above factors for explaining the rapid increase in the demand for education and to evaluate (3) the College Enrollment Quota Policy.

### **Chapter 2. The Separate Estimation of the Effects of Kindergarten-Entry Age, Age-at-Evaluation and Schooling on Educational Achievement**

This study separately estimates the effects of kindergarten-entry age, age-at-test and schooling on cognitive skills using the new identification strategy. These three variables are considered to be perfectly multicollinear in the period of compulsory schooling so that it is deemed that it is not possible to identify their effects separately. I exploit summer break as a period when age increases but schooling does not. The variation in survey date in NLSY79-CS and the summer break make it possible to resolve the multicollinearity problem. The instrumental variable (IV) estimation results show that kindergarten-entry age has a positive effect on math scores while it has a negligible effect on reading scores. Age-at-test has a positive effect at younger ages but the effect dissipates over time. Schooling is the most important factor that improves cognitive skills among the three factors. The estimation by regression discontinuity (RD) approach is also conducted as a robustness test and the RD results are consistent with the IV results.

### **Chapter 3. Age Culture, School-Entry Cutoff and the Choices of Birth Month and School-Entry Timing in South Korea**

This study explores how the age culture and elementary school-entry cutoff in Korea affect the decisions of parents on both birth and school-entry timing for their children. There is a traditional method of age calculation in Korea that is different from other countries, and Korea also has a distinctive age culture influenced by Confucianism. Korean age culture, which prescribes standards of behavior according to age, influences parents' decisions about school-entry timing as it relates to the child's Korean age and its effects on peer relationships in school. This study suggests that the distinctive age reckoning and culture strongly affect school-entry timing. This study also provides evidence that deliberate birth-month selection exists in Korea and shows that birth timing is related to school-entry timing.



**Three Essays in the International Aspects of  
Macroeconomics**  
Dissertation Abstract

**Kanit Kuevibulvanich**  
University of Wisconsin-Madison

**Chapter 1: Trade Liberalization and Wealth Inequality (Job Market Paper)**

Many studies on income inequality as a result of trade liberalization have yielded varying results, which are based on comparative statics and no capital accumulation; none have studied the aspect of household wealth. In this chapter, the dynamic effects of trade liberalization towards wealth inequality are examined. I develop a wealth heterogeneous-agent model enriched with features such as incomplete asset market, small open economy with two production sectors, specific-factor trade model with costly-switching sector-specific labor and perfectly mobile capital across sector and border, and iceberg-type cost as the trade barrier. Measured by Gini coefficient of wealth, I find that trade liberalization, defined as the elimination of trade barrier, initially increases wealth inequality, tapering towards more equitable wealth distribution in the long run. The counterfactual analysis estimates a peak increase of 0.8% at 4 years after the policy implementation and a 0.3% long-run decrease in wealth inequality, a 1.9% increase in GDP, with some households switching to the Non-tradable sector. Moreover, a decrease in trade barrier for importing goods leads to an increase in GDP, but wealth inequality increases and households switch to the Non-tradable sector in the long run. I also briefly discuss welfare and politico-economic aspects of trade policies. Comparing the steady states, bilateral trade liberalization leads to a 1.7% welfare improvement on average across all households as measured by consumption equivalence. However, not all households, particularly households in the Tradable sector, are in favor of the trade liberalization policy.

**Chapter 2: The Two-Period Model of Sector Choice, Trade, and Balance of Payments**

This chapter serves as an appendix to the question proposed in Chapter 1. Using a simplified two-period model closely based on the model presented in Chapter 1, I discuss the analytical solution, comparative statics, and simple numerical example. The intuition of model mechanism and the solution concept of the model are discussed to gain insights on the relationship between consumption, saving, and sector choice as a result of trade liberalization. The motivation for the model timeline is also illustrated.

**Chapter 3: Price Dynamics, Forecastability and Policy Implication of Core and Headline Inflation**

This chapter investigates the implication between core and headline inflation in three aspects. First, using time series analysis and the data from selected inflation-targeting countries, I empirically investigate the use of core inflation as the forecasting measure of headline inflation. Although theories suggest the use of core inflation in forecasting total inflation as it represents the persistent components of the price level, the results from data suggest otherwise and I find that core inflation is not necessarily a good forecasting measure in all countries. Second, I find the pass-through effect from total price level to core prices, suggesting the transmission from transitory components to persistent components of the price level. The results are not only seen in data from developing countries, but also in advanced economies. Third, I analyze the role of core inflation as inflation target using baseline New Keynesian model with sticky-price and flexible-price sectors. Although my result confirms the theoretical findings from previous literature that core inflation targeting is the optimal monetary policy, the welfare loss resulting from the use of headline inflation as the target is small. A slight deviation in inflation expectation and inflation learning is introduced and results in headline inflation targeting being the optimal policy instead.



# THREE ESSAYS ON PUBLIC ECONOMICS

Dissertation Abstract

LIYI LIU

University of Wisconsin-Madison

## **Evaluating the Impact of Social Welfare Programs on Intergeneration Transfers and Consumption - The Case of New Rural Pension Scheme in China**

This paper investigates the short-run effects of China's New Rural Pension Scheme (NRPS) on the households' expenditure and intergeneration transfer patterns in rural China. I use data from the 2008 and 2011 waves of Chinese Longitudinal Healthy Longevity Survey (CLHLS) and the 2011 and 2013 waves of China Health and Retirement Longitudinal Study (CHARLS). The results show that after participating in NRPS the probability of depending on themselves instead of their adult children and relatives for primary financial sources increases. However, I find a negative or not significant effects of NRPS participation on household expenditures, depending on the age of household members. Net transfers from children to their senior parents decrease using CLHLS samples, but the results are mixed in CHARLS; the short-run effects on NRPS suggest the program is ineffective in reducing the financial burdens on rural residents.

## **Fertility Behavior in Recent Housing Boom and Bust**

This paper investigates the fertility behavior in response to the recent rise and fall in housing prices. Recent studies show that an increase in housing price leads to an increase in fertility rate. My theoretical models suggest an ambiguous effect of housing prices on fertility for homeowners and a negative effect for renters. Using individual-level data from the annual ACS from 2001 to 2008, I estimate the fertility response to the change in housing prices during the housing boom and bust period for homeowners and renters separately. I use instrumental variable (Bartik instrument interact with Saiz elasticity) to deal with the location sorting issue. For homeowners, my IV estimation shows that a 100% rise in housing values increases the probability of having one more child by 0.022, but the result is not significant. For renters, the point estimation using instrumental variable is -0.145 and statistically significant at the 0.01 level. Both homeowners and renters empirical results are consistent with the theoretical model.

## **The impact of health insurance on the elderly health and quality of life in rural area: Evidence from China's New Cooperative Medical Scheme**

The New Cooperative Medical Scheme (NCMS) is a government-run voluntary insurance program that was launched in rural China in 2003. The program covered the whole country at the end of 2010. Using Chinese Longitudinal Healthy Longevity Survey (CLHLS) wave 2005 and 2011, this paper examines the longer term impact of NCMS, on health outcome and quality of life of the elderly population in rural China, who are most vulnerable to sickness and diseases. Using difference-in-difference approach, I do not find evidence that NCMS has improved the self-rated health conditions. However, if I use an alternative health measurement, i.e. interviewer-rated health status, I find positive improvements on the health outcomes of the senior population in the rural area compared to senior city population. Using DDD method, I also conclude that the poorer and the older individuals benefit more from the program than other groups.



# **Three Essays on Consumer Search and Discrete Choice Demand**

Dissertation Abstract

**Zichen Qiu**

University of Wisconsin-Madison

My dissertation consists of three chapters.

## **Chapter 1 Discrete Choice Model of Search for Product Information Using Data on Web Browsing and Purchasing Behavior**

In many markets consumers are not fully informed about the alternatives available. Before deciding which alternative to purchase, they often need to learn about products and their preferences through costly search. This chapter uses the favored fixed sample size search model suggested by De Los Santos, Hortaçsu and Wildenbeest 2012 to investigate the effects of search costs on generating heterogeneity in consumers' choice sets and purchases. Using a disaggregate data set which captured detailed web browsing and buying history for a massive number of Internet users across the United States, I estimate the distributions of search costs and of store-preferences across consumers. I also quantify the significance of search costs in affecting consumers' online search behaviors.

## **Chapter 2 Consideration Set Generation among Multi-product Firms with Search Costs Heterogeneity**

The second chapter of my dissertation focuses on a market consisting of multi-product firms, each offering a line of differentiated products. Consumers not only conduct price search, but also search aggressively for the best match to their idiosyncratic preferences. This chapter proposes a joint model of optimal searches and purchases in which consumers not only determine their consideration sets of stores to sample, but also the number of products to evaluate within each of them. Their decision depends on the trade-off between including one additional store into the consideration set, and including one additional product from one of the previously sampled stores. This chapter uses duration, a novel variable for costly search model, to further investigate the role of within-store evaluation in explaining the heterogeneity in consumers' consideration sets.

## **Chapter 3 Estimating Discrete Choice Demand using Information on Consideration Sets**

This chapter develops a structural demand estimation method using information on consideration sets. It combines a variety of techniques to characterize the optimal search time allocation and implied store-rankings based on the length of time spent. I investigate to what extent consumers search within- and across-stores before buying. This chapter applies the proposed estimation method to online apparel markets using a detailed data set that captures consumers' web browsing and purchasing histories. Using maximum likelihood method, I further estimate the distributions of search costs and of store-preferences across consumers. My findings show the frequency of ex-post loss of utility from search and demonstrate the significance of search costs in affecting consumers' online shopping behaviors.





# Essays in Education Economics and Social Interactions

## Dissertation Abstract

**Irina Shaorshadze**

**University of Wisconsin – Madison**

**Department of Economics**

**Chapter 1: Credit Constraints, College Quality Choice and Tuition Policy.** Large literature documents increase of the college premium since 1980s, and finds that the trend in college completion was not commensurable to the large increase in college premium. Another strand of literature investigated importance of credit constraints in college attainment and, with some exceptions, found that credit constraints are not the first order cause for explaining low college completion. Meanwhile parental income is found to be significantly related to college attendance and to college quality. Literature on credit constraints has typically looked at college attainment measured as college enrollment or years of schooling. However, if colleges of different quality have large tuition differences, credit constraints are also salient at the margin of the choice of quality of college. Quality of the college attended affects graduation probability and human capital accumulation, and thus may have persistent effect on the lifetime earnings. I look at the effect of the tuition policies and credit constraints on the quality of college attended and quantify rate of return to college quality.

To my knowledge, this is the first study that investigates structurally the importance of credit constraints for the college quality choice, while allowing for the possibility that college quality affects both college completion and wages in the labor market. It does this by bringing together several strands of the literature that have so far been distinct. Literature on credit constraints has abstracted on college quality choice. Meanwhile, literature that modeled choice of college quality has abstracted from credit constraints. Papers that document the correlation of family circumstance and college quality, or correlation of college quality and subsequent labor market returns do not investigate if the relationship is causal, or what if any role is played by credit constraints.

**Chapter 2: “Human Capital, Intergenerational Mobility and Public Policy” (with Ananth Seshadri).** The paper quantifies the effect of reallocation of public educational subsidies between early and late educational investment on inequality, intergenerational mobility and aggregate welfare. We model behavior of risk-averse parents that are subject to long-term credit constraints and existing government educational policy. We estimate production function that includes dynamic complementarity and complementarity between parental and public inputs. We embed this production function in the overlapping generation general equilibrium model and quantify the effect of alternative subsidy regimes.

**Chapter 3: “Peer Effects and Immigrants in Classrooms”, (with Jason Fletcher, Jenna Nobles and Steve L. Ross).** The paper examines the impact of school peer composition and friendship patterns on immigrant students’ academic and health outcomes in school through early adulthood (age 30). We examine how these effects differ based on school policies and practices, such as ability-tracking and extracurricular activity provision, and quantify the impacts of differential peer groups on inequality in immigrant outcomes. We identify causal impact of peers by exploiting within-school/across-cohort variation in peers. We find that classroom composition affects educational, social and health outcomes of foreign-born students. We also find long term effects that persist after students have finished high-school in terms of health behavior, test scores and labor market outcomes.



# Essays on Discrete Choice Models

## Dissertation Abstract

Wei Song

University of Wisconsin-Madison

My dissertation focuses on identification and estimation of discrete choice models. In practice, if the error term is independent of the covariates and follows some known distribution, the discrete choice model is usually estimated using some parametric estimator, such as Probit and Logit. However, when the distribution of the error is unknown, misspecification would in general cause the estimators inconsistent even if the independence between the covariates and the error still holds. The following three chapters relax the assumptions on the error distribution in the discrete choice models and propose semiparametric estimators.

### **Chapter 1: “Least Square Estimation of Semiparametric Binary Response Model with Endogeneity”**

In this paper we develop new results on identification and estimation of semiparametric binary response model with an endogenous explanatory variable. The identification is achieved based on a control variable approach.

We also propose a semiparametric estimator, which is  $\sqrt{n}$ -consistent and asymptotically normal distributed. The estimation is based on a nonlinear least square criterion, which we show is equivalent to an integrated maximum score criterion. In literature there is still no result about whether nonlinear least square estimator would be dominated by other estimators in terms of efficiency regarding semiparametric binary response model with endogeneity. Therefore, we provide a model averaging estimator, which combines the least square estimator and the maximum likelihood estimator of Rothe (2009). Monte Carlo simulation shows the performance of our estimator is consistent with our theory in finite samples. We also apply our estimator to the study of the causal effect of economic conditions on civil conflicts as in Miguel et al. (2004). In their paper, they use two-stage least square to estimate the effect of economic conditions on civil conflicts. We re-estimate their model using our semiparametric least square estimator.

### **Chapter 2: “A Semiparametric Estimator for Binary Response Models with Endogenous Regressors”**

This paper proposes a new semiparametric estimator for the binary response model with endogenous explanatory variables. We assume a triangular structure and use the control variable approach to account for endogeneity. In order to identify the model, we construct a control variable and assume the error is quantile independent of covariates given the control variable for a given quantile. This quantile independence assumption compared to the statistical independence is rather flexible in that it admits heteroskedasticity. The semiparametric series estimator in this paper is an extension of Khan (2013) with control variable. It can estimate both the parameters and the error distribution, and we prove this estimator is consistent and derive its convergence rate. In the Monte Carlo experiment, our estimator in general has smaller bias and standard deviation in comparison with the parametric two-stage Probit estimator for the binary response model with continuous endogenous regressors.

### **Chapter 3: “Estimating Semiparametric Panel Multinomial Choice Models using Cyclic Monotonicity” (with Xiaoxia Shi and Matthew Shum)**

This paper proposes a new semi-parametric identification and estimation approach to multinomial choice models in a panel data setting with individual fixed effects. Our approach is based on cyclic monotonicity, which is a defining feature of the random utility framework underlying multinomial choice models. From the cyclic monotonicity property, we derive identifying inequalities without requiring any shape restrictions for the distribution of the random utility shocks. These inequalities point identify model parameters under straightforward assumptions on the covariates. We propose a consistent estimator based on these inequalities.



# **Essays on Intergenerational Mobility**

## Dissertation Abstract

**Kegon Teng Kok Tan**  
University of Wisconsin-Madison

### **Chapter 1. Bequest Motives and the Social Security Notch**

Bequests may be a key driver of late life savings behavior, and more broadly a determinant of intergenerational inequality. However, distinguishing bequest motives from precautionary savings is challenging. Using the Health and Retirement Study (Asset and Health Dynamics among the Oldest Old), we exploit an unanticipated change in Social Security benefits (the Social Security Notch) to identify the effect of benefits on bequests. Our reduced-form results show that an increase in annual benefits leads to a sizeable increase in bequest amounts as well as an increase in the probability of leaving non-zero bequests. We combine our instrumental variable estimates with a model of late life savings behavior that accounts for mortality risk and unobserved expenditure shocks to estimate bequest motives. The model is used to produce two counterfactuals. The first demonstrates the importance of bequest motives as a driver of late life savings by comparing asset profiles with and without utility from bequests. We find that a large portion of accumulated assets are attributable to bequest motives among richer retirees. Our second counterfactual implements a more progressive Social Security benefits schedule that reduces benefits for the richest retirees. We show how retirees respond by making tradeoffs between bequests and consumption depending on their level of wealth.

### **Chapter 2. Neighborhood Choice and Neighborhood Effects**

We investigate how households choose where to live and how neighborhoods affect the ability of children. We use detailed panel data on the location of households to estimate a dynamic model of neighborhood choice at the Census tract level for renters in Los Angeles county. We then use different panel data with measures of child development to estimate tract-level neighborhood effects, defined as the impact of neighborhoods on child cognitive ability. We conclude by simulating a variety of housing voucher subsidies that differ by the size of the subsidy and the conditions attached to the subsidy with respect to the type of neighborhood recipients must move to. Among them include a Moving-to-Opportunity (MTO) type experiment, in which people residing in high poverty neighborhoods are given a rental voucher to move to a low-poverty Census tract. Child ability does not improve in the MTO simulation, as households receiving vouchers tend to move to the least expensive eligible neighborhoods with the lowest neighborhood effects. If these households had chosen a Census tract randomly among low-poverty tracts, child ability would have improved significantly. Our paper provides a way forward for policy makers to design cost-effective housing subsidies for improving child outcomes.

### **Chapter 3. Aspirations, Education, and Occupations**

While occupational aspirations have received much attention in the sociology literature, there is less work in economics examining its role in determining later life outcomes. This paper exploits recent advances in conceptualizing occupations as tasks to estimate the effect of early occupational aspirations on college attainment and occupation choices later in life. I find that occupational aspirations are a significant factor in later life outcomes. The estimated model is used to investigate the effect of boosting aspirations for high ability individuals with low aspirations, particularly those from disadvantaged families. I quantify the consequence of “mismatch” between aspirations and ability for college attainment, wages, and occupations.



# Essays on Competition in Health Care Markets

## Dissertation Abstract

**Emily Walden**

University of Wisconsin – Madison

### **Chapter 1: Can Hospitals Buy Referrals? The Impact of Physician Group Acquisitions on Market-Wide Referral Patterns**

In the United States, hospitals and multispecialty physician practices acquired over 1,300 primary care physician (PCP) practices between 2008 and 2013. These acquisitions increase the incentives acquired PCPs have to refer patients to specialists employed by the acquirer, altering referral flows in markets where physician group acquisitions take place. As a result, the acquisition of PCP practices may lead to an increase in the acquirer's share in the market for specialty services. Using Medicare billing data, I construct a novel database of over eight thousand physician mergers, which I link to data on referral relationships for the universe of physicians accepting Medicare. Utilizing an event study framework that takes advantage of the structure of referral linkages to control for merger endogeneity, I find that the average acquired PCP increases referrals to specialists employed by the acquirer by 39 percent after acquisition. This comes at the expense of referrals to specialists employed by competitors rather than from demand inducement. Following integration, referrals from the average acquired PCP to specialists employed by competitors fall by 10 percent. These results suggest that the acquisition of PCP groups by hospitals or multispecialty groups may result in an increase in market share in specialty services for acquirers. However, I also find evidence that competitors recoup some of the lost referrals from other PCPs in the market. Therefore, the typical acquisition of a PCP group results in the reshuffling of referral relationships in the market, rather than only an increase in market share of the acquirer.

### **Chapter 2: Strategic Complementarity in Physician Entry**

Policies aimed at reducing physician shortages typically target a specific specialty; however, if strategic complementarities exist between specialties, targeting one specialty may have spillover effects for others. Nearly all of the existing literature on physician entry treats doctors as homogeneous agents whose entry decisions are strategic substitutes – that is, a physician's profits are decreasing in the number of physicians. However, this assumption may not hold in some instances: because of referral relationships, additional PCPs in a market may increase specialists' profit, and vice versa. With this in mind, using the Area Health Resource Files and Medicare billing data, I estimate a model of physician entry that allows the entry decisions of specialists and PCPs to be strategic complements. I find evidence that the entry decisions of specialists and PCPs are strategic complements, but they may be strategic substitutes in some instances. For example, PCPs may choose to perform more specialty services themselves in instances when the market for PCP services is more competitive than markets for specialty services. I therefore extend the model of entry with strategic complementarities to test, for varying levels of physicians in the market, whether physicians of certain specialties are strategic substitutes or complements.

### **Chapter 3: Efficiency Gains through Hospital Employment of Physicians**

While the anticompetitive effects of healthcare mergers are well-studied, less is known about the potential they have for efficiencies in healthcare delivery. In this paper, I study the impact of integration between physicians and hospitals on cost efficiencies—in particular, referrals for low-value services. Because hospitals are able to tie the compensation of physicians they employ to cost metrics, they may be better able to incentivize employees to reduce these types of referrals relative to other physicians. To test this, I use Medicare claims data to look at whether becoming a hospital employee reduces the number of referrals for low-value services a physician makes to the hospital. ACO membership could substitute for physician employment and make hospitals more likely to act to reduce physician costs. Therefore, I estimate the effect of ACO membership and of physician employment conditional on ACO membership and compare these results to the initial findings.





# **Essays on Barriers to Trade**

## Dissertation Abstract

**Woan Foong Wong**  
University of Wisconsin - Madison

### **Chapter 1: The Round Trip Effect: Endogenous Transport Costs and International Trade**

Transportation facilitates trade but is often treated as exogenous to trade, symmetric, and time-invariant. This paper studies transport costs as a market outcome and highlights the round trip effect, a feature of the transportation industry which links transport supply between locations on major routes. Using novel data on port-level container freight rates matched with containerized trade, I introduce three stylized facts on how freight rates, distance, and trade are related in the presence of this effect. I utilize this effect to develop an instrumental variable to estimate the containerized trade elasticity with respect to freight rates. Incorporating transportation into a trade model, I show that this effect will mitigate any shocks on a country's trade with its partner and generate spillovers between a country's imports from and exports to the same partner, translating a country's import tariffs into a potential tax on its exports. Using my trade elasticity estimates, I simulate a counterfactual increase in US import tariffs to all its partners. This tariff increase not only decreases overall US imports but also US exports on the same bilateral routes. An exogenous transport cost model without the round trip effect would over-predict the fall in US imports and fail to capture the associated reduction in US exports at the bilateral route level.

### **Chapter 2: The Free Rider Effect and Market Power in Trade Agreements**

Regional trade agreements have proliferated recently while multilateral trade negotiations have stalled. Both these types of agreements are governed by the WTO and have to abide by the non-discriminatory (Most-Favored Nation, MFN) clause to varying degrees—regional agreements to a lesser extent than multilateral agreements. This paper investigates the free rider effect that can stem from the MFN clause and how it impacts country incentives towards these agreements. Free-riding occurs because countries cannot be excluded from the benefits of other countries' liberalizations and thus have less incentive to liberalize by signing trade agreements and offering its own market access. I extend the equilibrium model of endogenous trade liberalization via trade agreements developed by Saggi and Yildiz (2010) to better capture the effects of MFN. Within multilateral agreements, I show that the free rider effect eliminates global free trade as an equilibrium even when countries have symmetric market power. Within regional agreements, small countries are excluded more when agreements have to abide by the MFN clause compared to without.

### **Chapter 3: Pursuit of Preferential Trade Agreements and the Prospects of Global Free Trade: the Role of Key WTO Rules (with Kamal Saggi and Halis Murat Yildiz)**

Preferential trade agreement (PTA) members have to eliminate internal tariffs with each other but are allowed to discriminate against non-members. This can be in potential conflict with the WTO's overall non-discrimination most favored nation (MFN) clause. Using a competing exporters model of endogenous trade agreement formation, we study the central rules that govern PTAs (including free trade agreements, FTAs, and customs unions) and their implications for global free trade. We find that when circumstances are such that achieving complete global free trade is not possible, the FTA's zero internal tariff requirement increases total welfare by reducing tariffs. However, it also reduces the likelihood of reaching global free trade. Due to tariff complementarity, this requirement protects non-members from potential discriminatory external tariffs without the imposition of the MFN non-discriminatory clause. Finally, we show that the case for requiring a country to follow MFN as a non-member trading with FTA members is stronger if the country chooses to not join the FTA rather than if it were excluded.



# **Three Essays in Industrial Organization**

## Dissertation Abstract

**Duo (Josephine) Xu**  
University of Wisconsin-Madison

### **Chapter 1: A Matching Model of Merger in the Non-Profit Sector**

**Abstract:** This paper examines how mergers between non-profit organisations impact the provision of charitable services, and the implications for policy makers. Using data on U.K. non-profit organisation mergers between 2009 and 2011, I estimated a structural one-sided matching model of the merger market jointly with equations representing merger outcomes. This joint specification controls for endogenous matching between merger partners and reduces the bias in estimation of how different factors affect the merger outcome. Higher fund-raising efficiency significantly increase service provision of the merged organisation. I also find that merger between organisations in the same geographic area and/or with the same classification improves charitable service provision more than other mergers.

### **Chapter 2: The Effects of Non-Profit Mergers on Charitable Donations**

**Abstract:** This chapter estimates the effect of mergers between non-profits on the charitable donations received by them. Using an instrumental variable regression on U.K. non-profit annual account data, findings indicate that mergers increase the average donations received by an organisation. I find that post-merger, organisations' fund-raising expenditures tend to decrease. This empirical exercise is necessary to understand the implications of merger activities in the non-profit sector on organisations in terms of revenue obtained from donations.

### **Chapter 3: Entry and Exit in Local Service Industries: Evidence from U.S. Bars**

**Abstract:** Although economically very important, local service sectors have received little attention in the extensive literature on competitive interactions. Using empirical entry models in the tradition of Bresnahan and Reiss (1991), I estimate the degree of competition in the bar industry from observed entry decisions in different local markets. I find that additional entries of bars significantly increase the level of competition. This occurs not only when a second player enters the market, but also in markets already characterised by two or more incumbents. Unlike the predictions of many economic models, I find this increase to be larger when the entry occurs in a duopoly than in a monopoly.



# Essays on Microeconomics and Market Design

## Dissertation Abstract

**Nathan Yoder**  
University of Wisconsin-Madison

### **Designing Incentives for Academic Research (Job Market Paper)**

Over the last decade, researchers have made numerous efforts to assess the reproducibility of articles in the social and biomedical sciences, with results concerning enough to yield what many have termed a “replication crisis”. This phenomenon has frequently been attributed to the impact of publication incentives on researchers' methodological choices, yet has attracted limited attention from economists. In this paper, I consider the problem of designing these incentives. In keeping with current practice, I seek to reward researchers based on results instead of methods. This removes a degree of freedom from the optimal design problem, but I show that there need not be loss from doing so. I find that to optimally balance the benefits of research against the cost of rewarding researchers, a design must have two general characteristics. First, to discourage the production of false positive results, null results supporting conventional wisdom must be rewarded. Second, the most informative results must be disproportionately rewarded. In reaching these conclusions, I contribute to the literature on Bayesian persuasion by exploiting differentiability to characterize solutions and give new comparative statics.

### **Core Selection in Auctions and Exchanges (with Marzena Rostek)**

A design's ability to implement core outcomes is of central importance in practice. It is well known that such implementation is possible in those one-sided environments with the substitutes property. This paper characterizes divisible good environments in which core-selecting design is possible, offering a unified treatment of auctions where trade is necessarily one-sided and those where agents and the auctioneer can both buy and sell. We show that heterogeneity in either pre-auction marginal utilities or substitution patterns (as captured by utility Hessians) can independently challenge core selection. In particular, core selection may fail even with a single good and even when revenue is positive. We introduce a joint condition on preferences and equilibrium allocations which ensures that outcomes are in the core. Our results point to the alignment between the bidders' incentives to substitute and the trades necessary to realize the available surplus as the key to core selection.

### **Matching with Multilateral Contracts (with Marzena Rostek)**

The matching literature has so far focused almost exclusively on bilateral agreements. In this paper, we examine stability in environments where groups of agents interact. We do so by extending the matching with contracts (Hatfield and Milgrom, 2005) framework to allow for agreements among more than two agents and those which have externalities. In so doing, we offer a unified framework that admits most of the matching, network formation, and coalition formation literatures as special cases. In both transferable and nontransferable utility environments, we give results on existence, uniqueness, and efficiency of stable outcomes both in environments with substitutes and those with complements. We also give comparative statics results, showing how stable outcomes change when agreements are bundled together or become closer substitutes.

### **Partial Identification at Corner Solutions (with Andrea Guglielmo)**

Identification of marginal costs in Bertrand-Nash models of differentiated product competition generally requires inverting first-order conditions for local maxima. When firms' choices are corner solutions -- for instance, if they set prices at points where marginal revenue is discontinuous or at price floors or ceilings -- these first-order conditions are inequalities, and so we can only partially identify the parameters of interest at best. This is straightforward with single-product firms, but not with multi-product firms. We find that in multi-product settings, partial identification is possible at price ceilings or floors if and only if firms' products are substitutes, and is always possible when marginal revenue is discontinuous.



# **Essays on Monetary Policy, Exchange Rate, and Macroeconomy**

## Dissertation Abstract

**Yi Zhang**

University of Wisconsin-Madison

### **Chapter 1: Shadow Rates, Forward Guidance, and Unconventional Monetary Policy**

A shadow rate is often used to measure the overall stance of unconventional monetary policy. However, this paper shows that, by extracting the short end only, the shadow rate omits rest of the information contained in the term structure, which, as a whole, has a large impact on the economy. Hence the shadow rate is not a sufficient statistic for unconventional monetary policy. To better trace out unconventional monetary policy innovations and measure their corresponding macroeconomic impact, I develop a forward-guidance-corrected factor-augmented vector auto-regression (FGC-FAVAR) model which employs forward guidance information contained in survey data on expected lift-off dates. I use this forward guidance data as a proxy for omitted term structure information. After controlling for expectations about lift-off, I find that post-crisis expansionary monetary policy is much more aggressive and effective than that estimated by a standard FAVAR model (Wu and Xia (2016)).

### **Chapter 2: The Effects of Unconventional and Conventional U.S. Monetary Policy: The Role of Expected Inflation**

This paper converts unconventional monetary policy measures into equivalent conventional measures --- federal funds rate surprises and expected inflation surprises --- and compares the effects of unconventional and conventional monetary policy announcements on the value of the dollar through these channels. I find the impact of the federal funds rate surprises has not changed much since the crisis, although this channel has become irrelevant because the ZLB has eliminated all federal funds rate surprises. The impact of the expected inflation surprises, however, has weakened dramatically compared to the pre-crisis period.

### **Chapter 3: Exchange Rate Prediction Redux: New Models, New Data, New Currencies**

This paper expands the set of exchange rate determination models (Cheung et al. (2005)) to include Taylor rule fundamentals, yield curve factors, and incorporate shadow rates and risk and liquidity factors. The performance of these models is compared against the random walk benchmark. The models are estimated in error correction and first-difference specifications. We examine model performance at various forecast horizons using differing metrics. No model consistently outperforms a random walk, by a mean squared error measure, although purchasing power parity does fairly well. Moreover, along a direction-of-change dimension, certain structural models do outperform a random walk with statistical significance. While one finds that these forecasts are co-integrated with the actual values of exchange rates, in most cases, the elasticity of the forecasts with respect to the actual values is different from unity. Overall, model/specification/currency combinations that work well in one period will not necessarily work well in another period.

### **Chapter 4: Uncovered Interest Parity and Monetary Policy Near and Far from the Zero Lower Bound**

Relying upon a standard New Keynesian DSGE, we propose an explanation for two empirical findings in the international finance literature. First, the unbiasedness hypothesis --- the proposition that ex post exchange rate depreciation matches interest differentials --- is rejected much more strongly at short horizons than at long. Second, even at long horizons, the unbiasedness hypothesis tends to be rejected when one of the currencies has experienced a long period of low interest rates. We show how a monetary policy rule can induce the negative (positive) correlation between depreciation and interest differentials at short (long) horizons. The tendency to reject unbiasedness for Japan and Switzerland even at long horizons we attribute to the interaction of the monetary reaction function and the zero lower bound.

### **Chapter 5: Interest Tax on Capital Inflows and Exchange Rate Stability**

This paper analyzes the effect of an interest tax on capital inflows in a small open economy in a New Keynesian framework. We calibrate the model, and find an interest tax on capital inflows cannot stabilize the real exchange rate and output, unless this interest tax policy can be adjusted in time according to changes of economic shocks.