

To whom it may concern:

Please accept my application for sponsorship provided by the Household Finance Working Group at the National Bureau of Economic Research. I am Jane Yoo, Assistant Professor in the Department of Financial Engineering at Ajou University in South Korea. My research proposal is included below. I propose to study the role of endogenous credit constraints in household saving/portfolio selection.

1. Objective & Motivation

The main objective of my research is to build a theoretical model to explain the household savings and portfolio choices in which the choices are subject to credit constraints. The endogenous credit limit is investigated in the household portfolio problem by applying the optimal stopping rule on the maximum amount that she can borrow from a financial market. In finding the optimal credit limit, it is important to understand a consumer's strategic decisions to compare the gains from participating in the financial markets with that of remaining in autarky. Repayment histories, assets, income, and some demographic variables demonstrate the results of this choice.

Finding the optimal credit limit is an interesting problem from a macroeconomic perspective because it is directly related to lowering the welfare costs from defaulting accounts in an imperfect market. We can determine the policy implications of the endogenous credit limit model by testing various bankruptcy rules for insolvent consumers to compare the welfare costs. Ultimately, this research aims to propose an efficient bankruptcy rule, in which there are heterogeneous households with different sources and limits of credit. To calibrate the model, I will use some stylized facts from the microdata of heterogeneous households, including the types and amounts of credit, savings amounts, consumption patterns, and portfolio selections.

2. Previous Literature & Model Description

Household decisions on consumption and portfolio selection depend crucially on credit (or borrowing) constraints. There are many studies on the meaning of binding credit constraints in household financial problems. There are some studies, including He and Pages(1993), Duffie et. al (1997), and El-Karoui and Jeanblanc (1998), that have shown that borrowing constraints can significantly reduce household's demand for risky assets. Recent work by Athreya, Tam, and Young (2009, and 2012) focused on the uninsured labor income risk in examining the costs

of a personal bankruptcy rule. Their elaboration was based on Livishits, MagGee, and Tertilt (2007) and Chatterjee et al. (2007), who showed the improved welfare from a relatively lenient US bankruptcy rule, rather than the strict one. Despite the importance of the credit constraints on household consumption and portfolio choice, most studies focused on the role of secured credit, or on the household portfolio choices with the constraints in comparison to the choices without them. Borrowing limits, the limits on unsecured credit in particular, however, are significantly different across households. It is because borrowing limits are endogenously changing with household income and current levels of net worth.

When a household's value of remaining in the financial market greater than that of being in autarky, the dynamic consumption problem results in an aggressive portfolio – she increases the portion of risky assets if her income is expected to grow at a high growth rate but remains less volatile. With the assumption that unsecured credit limits will be extended in a bull market in the future, she may become more aggressive in determining the amount invested in a risky portfolio, even if the current market is bearish. In my model, this endogenous credit limit (or credibility) results the heterogeneous portfolio selection over the business cycle.

3. Research Plan

To provide a profound analysis on the strategic financial choices by endogenous credit limits, the model will include the limited commitment loan repayment system in a partial equilibrium with stochastic income and heterogeneous wage efficiency.

Necessary data are

- The credit limit on both unsecured and secured loans
- Longitudinal data on household savings and consumption
- Longitudinal data on household portfolio selection
- Statistics of the US bankruptcy rules (both Federal and State levels)
- Portfolios, incomes, savings, and consumption of default households

The research plan includes

- Summarizing the information of heterogeneous household credit histories
- Connecting the credit history with household savings and portfolios
- Tracking the dynamic changes of credit limits and saving/portfolio decisions according to business cycle fluctuations
- Calibrating the parameters of a household portfolio choice model with endogenous credit limits
- Comparing the welfare costs from various bankruptcy rules given endogenous credit limits

4. Research Budget

1) Workshop & Conference

- Consumer Expenditure Survey (CE) Microdata User's Workshop and Symposium (July 15 – 18, 2014)
: In this workshop, BLS staff members will open practical training sessions and information sharing group session. Individuals meetings with CE staff members can be scheduled throughout the workshop
 - \$2,000 for a return flight from South Korea to D.C. USA
 - \$1,000 for accommodation
 - \$500 for general travel expenses including food
- 2014 Financial Management Association Annual – Presentation (October 15 – 18, 2014)
: My working paper “A continuous-time consumption and investment problem under endogenous credit constraints” is invited for a presentation in the meeting
 - \$2,000 for a return flight from South Korea to Nashville, Tennessee USA
 - \$1,000 for accommodation

Subtotal = \$6,500

2) Data

- Link three major household finance datasets including
 - ✓ Consumer Expenditure Survey
 - ✓ Survey of Household Finance
 - ✓ Panel Study of Income Dynamics
- Stata upgrade to Stata/MP 13 perpetual subscription \$875
- Research Assistantship: 10 weeks * \$20 * 10 hours = \$2,000
- Miscellaneous expenses including conference registration fees, books and journal subscription fees etc.: \$625

Subtotal = \$3,500

TOTAL = \$10,000

Jane Yoo, Assistant Professor

Department of Financial Engineering, School of Business
Ajou University, South Korea

CONTACT INFORMATION	Department of Financial Engineering School of Business, Ajou University San 5, Woncheon-dong, Yeong-tong-gu, Suwon, 443-749 South Korea	Phone: (+82)31-219-3670 Email: janeyoo@ajou.ac.kr Site: sites.google.com/site/janeyoopage
EDUCATION	Ph.D. in Economics, George Washington University Washington, DC <i>Dissertation Advisor: Pamela Labadie</i> <i>Committee Members: Marco Cagetti, Roberto Samaniego, Tara Sinclair, Chao Wei</i>	August 2012
	M.A. in Economics, Yonsei University, Seoul, South Korea	August 2008
	B.A. in Economics, Ewha Womans University, Seoul, South Korea	August 2005
RESEARCH INTERESTS	Primary: Macroeconomics Secondary: Macro-Finance, Public Finance, Wealth Distribution,	
TEACHING EXPERIENCE	Assistant Professor Department of Financial Engineering, Ajou University <i>Undergraduate: Financial Management</i> <i>Graduate: Econometrics in Finance (Time-series Analysis), Macroeconomic Theory, Seminar in Empirical Finance</i> <i>(Teaching Evaluation: 4.41)</i>	Fall 2012 – Present
	Graduate Teaching Assistant, Department of Economics, George Washington University <i>Undergraduate: Principles of Economics (Microeconomics, Macroeconomics), Money and Banking, Financial Economics, International Economics</i> <i>(Teaching Evaluation: 4.6)</i>	Fall 2009 – Spring 2012
	Teaching Assistant, Department of Economics, Yonsei University <i>Undergraduate: Principles of Economics, Economic Dynamics, Population Economics</i>	Fall 2005 – Spring 2007
RESEARCH EXPERIENCE	Research Assistant, International Monetary Fund <i>Research Department, Macro-Financial Linkage Unit</i> <i>Department Unit Chief: Stijn A.M.F. Claessens</i>	January 2009 – August 2009
	Research Assistant, George Washington University <i>(Voluntary) International Finance - Graciela Kaminsky</i>	Fall 2007 – Spring 2008

	Research Assistant, Yonsei University <i>Brain Korea 21 project</i>	Fall 2005 – Spring 2007
	Research Assistant Ewha Womans University <i>Corporate Finance and Taxation, Brain Korea 21 project</i>	Fall 2004 – Spring 2005
HONORS AND AWARDS	Phillip J. Amsterdam Award Nominated 2012 Graduate Teaching Award Committee, George Washington University	Spring 2012
	Kendrick Prize 2011 “Best Macroeconomics Paper of the Year” Department of Economics, George Washington University	Spring 2011
	Brain Korea 21 Fellowship Ministry of Education, South Korea	Spring 2006 – Fall 2007
	Brain Korea 21 Research Assistantship Ministry of Education, South Korea	Fall 2004 – Spring 2005
PROFESSIONAL ACTIVITIES	Paper Presentation: “The Role of Inter Vivos Giving in General Equilibrium”	
	Graduate Students Brown Bag Seminar <i>Department of Economics, George Washington University</i>	March 2011
	72 nd International Atlantic Economic Conference	October 2011
	81 st Southern Economic Association Conference	November 2011
	2012 Eastern Economic Association Conference	March 2012
	2012 Midwest Macroeconomics Conference	November 2012
	Macroeconomics Brown Bag Seminar <i>Department of Economics, Yonsei University</i>	April 2013
	2013 Quantitative Society for Pensions and Saving	May 2013
	Paper Presentation: “Delinquency over the Life Cycle”	
	Graduate Students Brown Bag Seminar <i>Department of Economics, George Washington University</i>	November 2011
	2012 Eastern Economic Association Conference	March 2012
	Credit Risk Team, the Bank of Korea	December 2012
	Graduate Students Brown Bag Seminar <i>School of Business, Korea University</i>	April 2013
	2013 Asian Meeting of Econometric Society	August 2013
PUBLICATION	Household Credit Cycle in Korean Economy (Under review: Korean Financial Engineering Studies) Revisiting the relationship between environmental and financial performance: Evidences from U.S. Heavy-polluting industries, 1991-2008. <i>with Kim, K.H.</i> (Under review: Journal of Environmental Economics and Management)	

Hidden Cointegration between US Unemployment and Output

(Accepted: Economic Analysis, the Bank of Korea)

The Empirical Study on the Household Bankruptcy to the Expense Shocks

(Korean Studies of Statistics, Apr. 2014)

Bayesian Calibration on the Response of the Monetary Models to Productivity and Monetary Shocks

(Journal of Korean Financial Management, Dec. 2013)

Emergent Behaviors in Interacting Geometric Brownian Motions and Its Application to Finance with *Bae, H.O., Ha, S.Y., Kim, Y.S., Lee, S.H.*

(Under review *Mathematical Models and Methods in Applied Sciences*)

WORKING
PAPERS

Empirical Analysis of Listings and Delistings in Korea with *Wolfgang Bessler*

Forgiving Unsecured Debts: from Mirrleesian Perspective

Endogenous Liquidity Constraint of the US household with *Choi, K.J., Lim, B.W Koo, H.K.*

(Conference: Tsinghua Workshop in Macroeconomics 2014, FMA Annual 2014)

Forecasting Wind Energy by the Generalized Linear Model with *Alain Bensoussan*

Sovereign Debt Limit and Ceiling by Optimal Stochastic Control with *Abel Cadenillas*

When Leisure is luxurious with *Koo, J.L*

OTHER
INFORMATION

Citizenship: South Korea

Languages: English (Fluent), Korean (Native)