Hyok Jung Kim

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Recommendation letter writer: Anujit Chakraborty (email: chakraborty@ucdavis.edu)

Dear Professor Yuriy Gorodnichenko,

I would like to express my interest to participate in the upcoming NBER Behavioral Macroeconomics Research Boot Camp in March 2020.

To introduce myself, I am a fourth-year student specializing in behavioral macroeconomics at the University of California, Davis. My research topics are mainly related to introducing ideas from behavioral economics into macroeconomic context and findings of their empirical relevance. As a student in the borderline between macro and behavioral economics, I believe that understanding both traditional macro channels and other prevailing behavioral approaches is crucial to motivate a new research topic. My prior research experience puts emphasis on time-inconsistent preferences, but I need guidance on other behavioral channels that have sizeable aggregate implications. In this respect, the NBER Behavioral Macroeconomics Research Boot Camp brings a unique opportunity to me, and I sincerely hope I can have a chance to learn the frontiers in this area.

In this application package, I include the (1) statement of purpose to express my interest regarding this event along with current research ideas, and (2) a curriculum vitae summarizing academic experiences.

Yours sincerely,

Hyok Jung Kim

Ph. D. Candidate

The University of California at Davis

Hyok Jung Kim

Updated December, 2019

Contact Information	Department of Economics University of California, Davis	**Email** **Address** **Phone**	: khjkim@ucdavis.edu : 1128 J st, Davis, CA, 95616 : 530-760-6226

Education	Ph.D. in progress, Economics, University of California, Davis	Sep. 2016 –
	M.A. in Economics, Sungkyunkwan University	Sep. 2012 – Feb. 2016
	B.A. in Economics, Sungkyunkwan University	Mar. 2006 – Aug. 2012
Research Interests	Behavioral Macroeconomics, Computational Economics	
Current Projects	Eliciting the Present Bias and Sophistication using the U.S. Tax Rebates of 2001 and 2008	
Job Experience	Researcher, Korea Institute for Industrial Economics & Trade	Nov. 2014 – Aug. 2016
	RA, Korea Institute for Industrial Economics & Trade	Jan. 2014 – Oct. 2014
	Public Service Officer, Gunpo City Hall (Military Substitute)	Sep. 2007 – Oct. 2009
Teaching Experience	Teaching Assistant at UC Davis: Principles of Macroeconomics (×2), Intermediate Macroeconomics (×6), Intermediate Microeconomics (×1)	
Academic Activity	Presentations: Macro/International Brownbag Theory/Behavioral Brownbag: Theory/Behavioral Brownbag Organizer	 2017 Spring, 2019 Fall 2019 Fall 2019 Fall
Language	English (fluent), Korean (native)	

Courses Taken First year at UC Davis:

Fall Micro Theory (A), Economic History (A-), Econometric Foundations (A)
Winter Micro Theory (A-), Macro Theory (A), Econometric Methods (A-)
Spring Micro Theory (A-), Macro Theory (A+), Econometric Methods (A-)

Second year at UC Davis:

Fall Advanced Theory (A+), International Econ (B), International Econ (A-)
Winter Game Theory (A), Macroeconomics (A), Topics in Economics (A)
Spring Topics Econ Theory (A+), Macroeconomics (A), Macroeconomics (A)

Statement of Purpose for Participation of

NBER Behavioral Macroeconomics Research Bootcamp in 2020

I was mainly interested in macroeconomics when I started my graduate studies. After learning crucial tools in economics during the first year, I contemplated what I can expect from second-year courses. I chose to attend microeconomic theory classes simply because the first-year macro sequence echoed that macroeconomic models should be micro-founded and taking advanced microeconomic theory would make me into a better micro-founded person. The first two courses in second-year microeconomic theory were covering frontiers of general equilibrium theory, non-expected utilities, and mechanism design. Initially, all I knew about macroeconomics centered around the dynamic general equilibrium framework, and I felt that the second-year courses were far too advanced, if not exotic, to enrich my initial stock of knowledge.

The last sequence of the microeconomic theory in the second year was about behavioral economics taught by Professor Anujit Chakraborty. I thought this topic has very little to do with my future research agenda. However, I had to take this to complete the second-year requirements. However, taking this course was one of the best things happened in my second year. As the course went through, I learned the main pillars of behavioral economics, (1) axiomatization of *exotic* utility functions, (2) time-inconsistent preference, and (3) reference dependence utility combined with pieces of evidence from lab experiments. Those seemingly abnormal behaviors were shocking, and I had to rethink about the micro-foundations underlying preferences, optimizing behavior, and projections of agents. It was not the micro-foundations I expected before the start of the second year, but the best and most interesting research agenda to fill my third year.

The main topic I study now is incorporating time-inconsistent preference into household finance where I try to elicit the degree of time-inconsistency using a high marginal propensity to consume (MPC) observed in the U.S. tax rebates of 2001 and 2008. Explaining excess MPC was already addressed by many researchers, such as Kaplan and Violante (2014) and Lian (2019). My approach is using both present bias and sophistication (the households' perception of future present bias) where both capture the level of MPC. While severe present bias unambiguously increases MPC, I find that the effect of sophistication to MPC depends on the curvature of utility function which is not featured in previous literature. I show the range of curvature that reconciles the finding in O'Donoghue and Rabin (1999) where sophisticated households are more seemingly impatient, but this is not always the case. At the same time, the model tries to capture the realistic household portfolio with a high dependency on illiquid assets which is also controlled by the degree of sophistication.

Before going into actual estimation, I repetitively gathered comments about how behavioral assumptions can give a stark difference to prevailing macro approaches and its empirical relevance. Also, there is an emerging group of researchers using behavioral assumptions to explain the same phenomenon. I think all the approaches are valid and can help the understanding of the high degree of MPC observed in data. In this NBER Research Bootcamp, I

hope it can be a great chance to learn behavioral approaches in a broader aspect and think about other potential alternatives that can be related to my current topic.

I also have a few more ideas related to time inconsistency. If I briefly introduce each topic, one topic is incorporating time inconsistency into a consumption-based capital asset pricing model (CCAPM) framework and examining if it can explain the term structure of interest rates. The other topic is extending of consumption and savings choice with both intensive and extensive margin of labor and characterizing the optimal amount of unemployment insurance. Unemployment insurance should be carefully designed to balance consumption smoothing benefits (immediate benefits) and job search costs (immediate cost), understanding how consumers react to those cost dynamic cost and benefits is crucial, and I think time inconsistency can shed some light how to optimally design unemployment insurance to mitigate welfare loss from agents not realizing their true degree of present bias in the future.

So far, I did not have enough chances to explore other features of behavioral economics that can generate aggregate impact. Though I mainly dealt with time-inconsistent preferences so far, I am open to other behavioral ideas that are equally important and interesting. If I can have this precious opportunity, it would be exciting to learn other behavioral macroeconomics literature and state of the art techniques that I can use in my future research and set as a role model.

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From:
Anujit Chakraborty
Assistant Professor of Economics
Email: chakraborty@ucdavis.edu

December 09, 2019

Letter of Recommendation for Hyok Jung Kim

Dear members of the Committee

It is a true pleasure for me to recommend Hyok Jung Kim, a fourth year graduate student in the Ph.D. program of the Department of Economics at UC Davis, for the Behavioral Macroeconomics Research Boot Camp. I am Hyok Jung's main advisor.

If I compared potential and achievement at the four year mark in a PhD program, Hyok Jung would be best graduate student I have encountered in my three years as an assistant professor, and in my six years as a graduate student at University of British Columbia. I believe that we get a student of his quality only once every few years. Other than me (my research is in behavioral economics), his thesis committee has a theorist (Andres Carvajal), a macroeconomist (James Cloyne) and an econometrician (Bulat Gafarov), and each one of them are in agreement that Hyok Jung is an extra ordinary graduate student in terms of his diverse technical skills, what he has done and what he is capable of, and they would be happy to vouch for it if contacted. Given the inter-disciplinary nature of the boot camp, James volunteered to write a couple of sentences from his expertise in macroeconomics, that I attach at the very end of this letter. I do not have a lot of years of graduate advising behind me to be able to compare him to my past students, but I hope that the unanimously super-positive opinion that his committee (which combined has considerable advising experience) has about him can make up for it.
His research agenda is explaining the high marginal propensity to consume (MPC) observed during the U.S. tax rebates of 2001 and 2008 using quasi-hyperbolic discounting preferences with partially sophisticated agents. I describe his research in the next section and then then provide my overall evaluation of in the final section of this letter. Section titles are in blue.

Description of the research done by Jung so far:

Main paper: Consumption, Savings and Welfare under Time Inconsistency and Sophistication

Research Questions attempted in the paper:
i) O'Donoghue and Rabin (1999, 2001) showed that in a dynamic setting, sophisticated present-biased agents (type space $(\beta, \tilde{\beta}, \delta)$[1]) reap immediate benefits too soon and suffer additional

[1] The agent discounts utility between the present and next period by $\beta\delta$ for $\beta < 1, \delta < 1$, while he discounts other pairs of adjacent periods in the future by δ. The point-belief the agent holds

welfare loss, when compared to naive subjects. On the empirical side, Parker (2017) uses survey data to show that over-consumption is associated with greater impatience and lack of planning (a proxy for lack of sophistication). It seems that theory and empirics might be at odds regarding the consumption behavior and welfare implications of sophistication.
Resolution: Hyok Jung shows that the intertemporal elasticity of substitution ($1/\sigma$ if the utility function is $u(c) = c^{1-\sigma}/(1-\sigma)$) is crucial in determining over-consumption and the welfare comparison between naïve vs. sophisticate.

ii) Could one extend the exercise of finding closed form solutions to the consumption savings problem for partially sophisticated present biased agents, when both income and asset returns are stochastic? (Even guaranteeing the existence of such a unique solution is technically non-trivial as the value function could be non-concave and discontinuous.)
Resolution: Hyok Jung is currently working on answering research question (ii). The main technical challenge he is facing is that with stochastic income and asset returns the continuation value is no longer necessarily concave.

iii) Could the over-consumption (high MPC) response of consumers during the U.S. tax rebates of 2001 and 2008 be explained through the existence of partially sophisticated agents with quasi-hyperbolic discounting? (The data used here is from Survey of Consumer Finances)
Resolution: Jung's paper estimates $(\beta, \tilde{\beta})$ using exogenous variations of timings in tax disbursements from the U.S. tax rebates of 2001 and 2008. He additionally investigates the source of heterogeneity among different demographic groups and finds that estimated rebate coefficients are consistently largest in both tax rebates within the group with college education experience but without more advanced degrees. The group with no occupation show the highest response in both tax rebates, and the age group over 60 shows a higher response than other groups in both tax rebates.

Overall Assessment:

The paper, and the results he has obtained are observables that anyone can use to judge the quality of his candidature. But let me spend a couple of words on the unobservables: He is one of the most hard-working and methodical people I have seen, and he is extremely driven and entrepreneurial.
His is the kind of personality who would be grateful of any opportunity that comes his way and make the best of out of it. If you are in search of a candidate who contribute and gain immensely in a boot camp-environment, then Hyok Jung is definitely that person.
I hope that he will be considered as a top candidate for the boot camp. I recommend him wholeheartedly, enthusiastically and with no reservations. Please contact me if more information is needed.

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on her future self's present bias is captured by an additional parameter $\tilde{\beta} \in [\beta, 1]$. Agents are sophisticated, partially sophisticated and naïve if $\tilde{\beta} = \beta$, $\tilde{\beta} \in (\beta, 1)$ and $\tilde{\beta} = 1$ respectively.

**** Addendum:**

James Cloyne, the macroeconomist on Jung's committee wanted me to add this comment of his, to my letter: "I have a very high opinion of Jung. His research ideas seem extremely promising and he has a great set of theoretical and econometric skills. Jung already has a developed paper, spanning behavioral and macro-economics, which links a novel theoretical result with the empirical literature on the effects of tax rebates. Jung's paper will hopefully shed light on what behavioral mechanisms might explain some of the heterogeneous marginal propensities to consume that we see in the data, an issue that has important implications for macroeconomic policy. In short, Jung is super-productive, creative and entrepreneurial. He'd be a fantastic fit for this boot camp."