NBER AI Workshop Application

Applicant: Donghyun Suh

1. CV and Contact Information
2. Interests in AI

Donghyun Suh

Department of Economics
University of Virginia
248 McCormick Rd
Charlottesville, VA 22904, USA
+1 (434) 227-7947
ds2qzc@virginia.edu

Education

University of Virginia, Second-year Ph.D. Student in Economics 2019 - Present

- Main Focus of Study: Macroeconomics

Yonsei University, M.A. in Economics 2016 - 2018
Yonsei University, B.A. in Economics 2010 - 2014

Coursework

First-year Microeconomics, Macroeconomics, and Econometrics sequences
Second-year Macroeconomics sequence

- The Economics of AI and the Future of Work (Professor Anton Korinek)
- Markets with Frictions (Professor Zach Bethune)
- Empirical Macroeconomics Part 1 (Professor Jae Won Lee)
- Empirical Macroeconomics Part 2 (Professor Eric M. Leeper)

Second-year Industrial Organization sequence
Second-year Time Series and Cross Section Econometrics
Second-year Financial Economics and International Finance

Work Experiences

Research Assistant for Professor Anton Korinek
University of Virginia 2020 - Present
Research Associate
Korea Development Institute, Republic of Korea 2018 - 2019

Publications

1. **Park, Jin Seok, and Donghyun Suh**. "Uncertainty and household portfolio choice: Evidence from South Korea." *Economics Letters* 180 (2019): 21-24.

Presentations

- 2018 Conference of Korea Labor and Income Panel Study, Republic of Korea

Languages

- Korean (native), English (fluent)
- Python, STATA, MATLAB, Julia

Honors and Awards

- Best Graduate Student Research Paper Award, Korea Labor Institute (2018)
- Mo-Un Scholarship (2017)

My Interests in AI
Donghyun Suh

In my Ph.D. dissertation, under the supervision of Professor Anton Korinek, I analyze how a low-interest rate environment affects innovation. Technological progress is often considered to be a long-term, gradual phenomenon. I ask how it can be affected by macroeconomic factors such as interest rates, focusing on a situation where the interest rate cannot adjust downward in response to adverse shocks. This is motivated by the current situation that many advanced economies face. I explore the implications of such shocks for technological progress in an endogenous growth framework.

In the standard setup with exogenous TFP, the usual result applies. When the zero lower bound (ZLB) binds due to a negative productivity shock the level of investment is lower relative to the flexible price case. On the contrary, in an economy where TFP grows due to learning-by-doing (LBD), I find that the level of investment at the ZLB depends on the degree of LBD externality. When the economy exhibits increasing returns to scale due to a high degree of externality, the level of investment at the ZLB is higher than the flexible price case. This contrasts the exogenous TFP benchmark where there is less investment when the ZLB binds.

If this mechanism is present it is possible that the aggregate demand shortage problem is mitigated as the level of investment is relatively higher. Furthermore, this implies that due to the increasing returns to scale the level of technology can be higher compared to the flexible price benchmark.

I plan to further explore the interaction between technological progress and the ZLB. In particular, I believe this can shed light on the long-term growth and TFP dynamics in advanced economies that are more likely to experience the binding ZLB in the future.