

DEOKJAE JEONG

SSK Inclusive Economic Policy Research Team
Republic of Korea
+82 (10) 2516-0461 ■ ubuzuz@gmail.com
<https://jayjeon.com>

EDUCATION

Ph.D. in Economics, University of California, Davis	2024
M.S. in Economics, University of Wisconsin, Madison	2018
M.A. in Economics, Sung Kyun Kwan University (Korea)	2012 (<i>coursework complete</i>)
B.A. in Law, Sung Kyun Kwan University (Korea)	2010

RESEARCH INTERESTS

Applied Microeconomics, Labor Economics

RESEARCH EXPERIENCE

SSK Inclusive Economic Policy Research Team	
Postdoc	2024 ~ Present
Korea Institute of Public Finance	
Center for Performance Evaluation and Management	2014 ~ 2015
<i>Research Associate</i>	
Korea Development Institute	2012 ~ 2014
Department of Human Resource Development Policy	
<i>Research Associate</i>	

WORKING PAPERS

How the Reduction of Temporary Foreign Workers Led to a Rise in Vacancy Rates in South Korea (Submitted to the Journal of Human Capital)

Abstract: This paper investigates the impact of a reduction in low-skilled Temporary Foreign Workers (TFWs) on job vacancies in South Korea's manufacturing sectors. The study harnesses a quasi-experimental event —the commencement of a COVID-19 quarantine policy in January 2020— as the foundation to pinpoint the causal link between the dwindling numbers of TFWs and the subsequent increase in job vacancies. This stringent quarantine measure acted as the 'shift'

component in my shift-share instrument, while the pre-pandemic distribution of TFWs across various manufacturing sectors functioned as the ‘share’ component. Utilizing Difference-in-Difference regressions with continuous intensities, the research underscores that sectors with a heavy dependence on TFWs witnessed a significant spike in vacancies a year following the COVID-19 outbreak, and this surge lasted for two years. Consequently, firms grappled with the challenge of securing full-time staff, given that most of these foreign workers (E9 visa holders) had been primarily engaged in full-time roles. This highlights that domestic workers are not readily available to fill vacant positions, especially as full-time workers. The paper also incorporates the Local Projection methodologies to substantiate these observations.

Automation, Human Task Innovation, and Labor Share: Unveiling the Role of Elasticity of Substitution (with Seungjin Baek, Submitted to the European Economic Review)

Abstract: This paper investigates the elements contributing to the change in labor share, with a specific focus on the roles of ‘automation’ and ‘innovation in human tasks.’ We construct a general equilibrium model that distinctly incorporates both robot and non-robot capital to derive an econometric specification. Using task data from O*NET and employing the most recently developed sentence embedding tools to match tasks and patents, we construct a novel ‘innovation in human tasks’ variable for multiple countries. This allows us to empirically evaluate the impact of innovation in human tasks on labor share across countries for the first time in the literature. Our accounting analysis suggests that the positive influence of human task innovation outweighs the adverse effects of automation in most of countries we study. From our regression analysis, we estimate the elasticity of substitution between labor and non-robot capital to be less than one, while the elasticity of substitution between tasks is greater than one. With these estimates, we elucidate the direct and indirect effects of automation and innovation in human tasks on labor share.

WORK IN PROGRESS

Developing a Routine Task Index Using Large Language Models

Abstract: This study proposes a novel method for measuring Routine Task Intensity (RTI) and task cognitivity using Large Language Models (LLMs) to analyze O*NET task descriptions. We introduce AI-decided Routine Task Intensity (AIRTI) and AI-decided Cognitive Task Intensity (AICTI) as complements to existing measurements, addressing limitations in previous approaches such as outdated data sources and insufficient capture of task repetitiveness and cognitive demands. Our method employs LLMs to assess the routineness and cognitive intensity of occupational tasks

on a scale from 0 to 1, averaging these values within six-digit SOC occupational categories. To mitigate potential reliability issues, we utilize two LLMs: OpenAI's GPT-4 and Anthropic's OPUS-3.

Market Concentration and Labor Share: An EU Critique of the Superstar Firms Theory

Abstract: This paper contends that the Superstar Firms theory by Autor et al. (2020) inadequately explains the decline in labor share in EU countries. Although market concentration has risen in the U.S., it has notably decreased overall in EU nations. We first demonstrate the weak correlation between market concentration and changes in labor share in the EU using CompNet data. We then delve deeper with firm-level data from Orbis. Finally, we offer compelling reasons that are unique to the EU context. We conclude that while the Superstar Firms theory is a robust explanation for the U.S., it cannot be universally applied.

PRESENTATIONS (*: Scheduled)

SSK Networking 4th Joint Symposium	2024
Western Economic Association International 99th Annual Conference	2024
American Economic Association Annual Meeting	2024
Korea-America Economic Association Job Market Conference	2023
Applied Microeconomics Student Talk, UC Davis	2022, 2023
Annual All-California Labor Economics Conference	2023
Advisees' Meeting Presentations, UC Davis	2021, 2022, 2023

TEACHING EXPERIENCE

UC DAVIS, Teaching Assistant	2018 ~ 2024
ECN 1A Introductory Microeconomics	
ECN 1B Introductory Macroeconomics	
ECN 100A Intermediate Microeconomics	
ECN 101B Intermediate Macroeconomics	
ECN 110B World Economic History	
ECN 131 Public Finance	

FELLOWSHIPS

Research Award, UC Davis, Department of Economics	2023
Non-Resident Tuition Fellowship, UC Davis	2019 ~ 2022
SimSan Scholarship, SimSan Foundation	2010 ~ 2012
Scholarship for Academic Excellence, Sung Kyun Kwan University	2009

SKILLS

Stata, Python, SAS, R, MATLAB
English (fluent), Korean (native), Japanese (advanced)

REFERENCES

Giovanni Peri

Professor
University of California, Davis
Department of Economics
gperi@ucdavis.edu

Oscar Jorda

Professor
University of California, Davis
Department of Economics
ojorda@ucdavis.edu

Athanasios Geromichalos

Professor
University of California, Davis
Department of Economics
ageromich@ucdavis.edu