

# DEOKJAE JEONG

SSK Inclusive Economic Policy Research Team  
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## EDUCATION

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

## RESEARCH INTERESTS

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Applied Microeconomics, Labor Economics, Innovation, Immigration

## RESEARCH EXPERIENCE

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

## WORKING PAPERS

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**Automation, Human Task Innovation, and Labor Share: Unveiling the Role of Elasticity of Substitution** (coauthored with Seungjin Baek)

*Abstract:* This paper investigates the elements contributing to the decline in labor share, with a specific focus on the roles of 'automation' and 'innovation in human tasks.' We construct a general equilibrium model that separately incorporates both robot and non-robot capital to derive an econometric specification. Based on our regression results, we estimate the elasticity of substitution

between labor and non-robot capital to be less than one. Conversely, the elasticity of substitution between tasks is estimated to be one. Together with these estimates, our regression results yield three major findings. First, we identify two distinct channels through which robots affect labor share: automation and the decrease in the price of robots. Both channels are found to negatively impact labor share. Our general equilibrium model predicts that the effect of declining robot prices will intensify as robots become more prevalent. Second, we are the first to empirically evaluate the impact of human task innovation on labor share by constructing a novel index for new human tasks. Our accounting analysis suggests that the positive influence of human task innovation outweighs the adverse effects of automation. Lastly, by utilizing estimates of the elasticity of substitution between labor and non-robot capital, as well as between tasks, we elucidate the mechanisms through which factor prices affect the labor share. Specifically, we find that both the negative effect of automation and the positive effect of human task innovation are amplified through the aggregated task price channel.

## **How the Reduction of Temporary Foreign Workers Led to a Rise in Vacancy Rates in South Korea**

*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-inDifference 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.

## WORK IN PROGRESS

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### 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)

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SSK Symposium*	2024
Western Economic Association International 99th Annual Conference*	2024
Korea-America Economic Association workshop at the 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 (poster)	2023
Advisees' Meeting Presentations, UC Davis	2021, 2022, 2023

## TEACHING EXPERIENCE

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<b>UC DAVIS, Teaching Assistant</b>	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

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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

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

## REFERENCES

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### **Giovanni Peri**

Professor

University of California, Davis

Department of Economics

[gperi@ucdavis.edu](mailto:gperi@ucdavis.edu)

### **Oscar Jorda**

Professor

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### **Athanasios Geromichalos**

Professor

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