

# DEOKJAE JEONG

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## EDUCATION

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

## RESEARCH INTERESTS

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Applied Microeconomics, Labor Economics, Innovation, Immigration

## WORKING PAPERS

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### **Automation, Human Task Innovation, and Labor Share: Unveiling the Role of Elasticity of Substitution (Job Market Paper)**

*Abstract:* This paper investigates the elements contributing to the decline in labor share, with a particular focus on the roles of ‘automation’ and ‘innovation in human-exclusive tasks.’ We construct a general equilibrium model that separately incorporates both robot and non-robot capital to derive a regression equation. The regression results reveal four major findings. First, we identify two distinct channels through which robots influence labor share: automation and the reduction in robot prices. We find that both channels negatively impact labor share. Our general equilibrium model predicts that the effect of decreasing robot prices will intensify as robots become more prevalent. Second, we are the first to empirically assess the impact of innovation in human-exclusive tasks on labor share. Our findings suggest that the positive influence of human-exclusive innovation outweighs the adverse effect of automation. Third, we estimate that the elasticity of substitution between labor and non-robot capital is less than one, while the elasticity of substitution between tasks is greater than, but close to, one. Lastly, based on these estimates, we clarify the mechanisms by which the prices of factors —labor, robots, and non-robot capital— influence labor share. Specifically, we observe that both the negative effect of automation and the positive effect of human-exclusive 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-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 Structural Vector Autoregression and Local Projection methodologies to substantiate these observations.

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## WORK IN PROGRESS

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

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## PRESENTATIONS (\*: Scheduled)

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

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## TEACHING EXPERIENCE

<b>UC DAVIS, Teaching Assistant</b>	2018 ~ Present
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

## RESEARCH EXPERIENCE

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<b>Korea Institute of Public Finance</b>	2014 ~ 2015
Center for Performance Evaluation and Management <i>Research Associate</i>	
<b>Korea Development Institute</b>	2012 ~ 2014
Department of Human Resource Development Policy <i>Research Associate</i>	

## 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**

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University of California, Davis  
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### **Athanasios Geromichalos**

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