

# DEOKJAE JEONG

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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

## RESEARCH EXPERIENCE

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<b>Jeonbuk National University, Economics</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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[How the Reduction of Temporary Foreign Workers Led to a Rise in Vacancy Rates in South Korea](#) (Submitted to the Journal of Human Capital, Revise and Resubmit received)

*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.

### **Measuring Routine and Cognitive Task Indices: Using Large Language Models to Analyze Occupational Change in the United States** (with Tai Lee, Submitted to Labour Economics)

*Abstract:* This study proposes an innovative methodology for quantifying Routine Task Intensity (RTI) and Cognitive Task Intensity (CTI) using Large Language Models to analyze O\*NET task descriptions. Employing these LLM-derived measures, we reveal a consistent decline in routine occupations across Service and Sales sectors, with Sales receiving limited attention in existing literature. Regression analysis indicates a significant upward trend in cognitive impact on wages for females, particularly in Service, Sales, and to a lesser extent, Management occupations, while routine coefficients remain stable across five decades. These results underscore the growing significance of cognitive skills, especially for women in the workforce. Despite limitations in LLM output reliability and replicability, our methodology offers a complementary perspective to existing approaches, enabling a comprehensive understanding of labor market transformations.

### **Automation, Human Task Innovation, and Labor Share** (with Seungjin Baek)

*Abstract:* This study examines the impacts of robotic innovation (RI) and human innovation (HI) on labor share across nine EU countries. Using a general equilibrium model and novel shift-share instruments, we address endogeneity concerns by utilizing International Federation of Robotics data, US patents, and a Cognitive Tasks Index. Our findings show that until 2024, RI's negative impact has exceeded HI's positive effect on labor share. We estimate the elasticity of substitution between labor and non-robot capital at 0.52, and between labor and robots at 2.67. These results offer insights for policymakers addressing declining labor share, emphasizing the importance of fostering human innovation alongside technological advancement.

## WORK IN PROGRESS

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### **Market Concentration and Labor Share: An EU Critique of the Superstar Firms Theory** (with Ju Hyun Pyun and Corinne Stephenson)

*Abstract:* This study examines the Superstar Firms theory proposed by Autor et al. (2020), focusing on its applicability to European Union (EU) nations. Our findings suggest that the Superstar Firms theory does not adequately explain the decline in labor share observed across EU countries. Contrary to the United States, where market concentration has increased, EU nations have experienced a notable overall decrease in market concentration, as thoroughly investigated by Kalemli-Özcan et al. (2024). Utilizing firm-level data from Historical Bvd Orbis, we initially demonstrate a weak correlation between market concentration and changes in labor share within the EU. Subsequently, we establish the absence of a significant correlation between markup and concentration. Finally, we propose a compelling model tailored to the unique EU context, which elucidates these empirical findings. We conclude that while the Superstar Firms theory offers a robust explanation for trends in the United States, its universal applicability is limited, particularly in the context of the EU.

## PRESENTATIONS (\*: Scheduled)

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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

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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, Python, SAS, R, MATLAB  
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  
University of California, Davis  
Department of Economics  
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### **Athanasios Geromichalos**

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Department of Economics  
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