

# 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>Korea Customs and Trade Development Institute</b> <i>Research Fellow</i>	2025 ~ Present
<b>Jeonbuk National University</b> <i>Postdoc, Economics</i>	2024
<b>Korea Institute of Public Finance</b> Center for Performance Evaluation and Management <i>Research Associate</i>	2014 ~ 2015
<b>Korea Development Institute</b> Department of Human Resource Development Policy <i>Research Associate</i>	2012 ~ 2014

## 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, forthcoming)

*Abstract:* This study investigates the causal relationship between the reduction of low-skilled temporary foreign workers (TFWs) and job vacancies in South Korea's manufacturing sectors, utilizing the COVID-19 quarantine policy as a natural experiment. Employing a Difference-in-Differences methodology, the research reveals that sectors with high dependence on TFWs,

particularly for permanent positions, experienced significantly elevated vacancy rates for a two-year period following the onset of the pandemic. The inability of native workers to fill these positions highlights the critical role of foreign labor in mitigating labor shortages. Notably, vacancy rates began to decline only after the government relaxed quarantine restrictions, facilitating the re-entry of TFWs into the country. These findings are corroborated by local projection methods.

### **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** (Submitted to Research Policy)

*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**

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### **Athanasios Geromichalos**

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