

# JIE DUAN

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🏛️ Institution: Department of Economics, National University of Singapore

## EDUCATION

Ph.D. Economics, National University of Singapore August 2020 - June 2025 (Expected)

Committee: Paul Jackson (NUS, Advisor), Ying Feng (NUS), Ronald Wolthoff (University of Toronto)

MSc. Economics, London School of Economics and Political Science August 2018 - May 2019

B.A. Economics, Central University of Finance and Economics September 2014 - June 2018

## RESEARCH FIELDS

**Primary:** Macro Labor

**Secondary:** International Trade

## JOB MARKET PAPER

**Uncertainty, Learning, and the Unemployment-Education Gap over the Life Cycle**, with Paul Jackson (NUS)

**Abstract:** We document that college graduates predict their future occupation more accurately than those without a college degree. Based on this fact and additional evidence, we hypothesize that college graduates start their career with less uncertainty regarding their best fit in the labor market. We refer to this difference by education as the uncertainty channel. To quantify the uncertainty channel, we develop a life cycle search model where workers learn their best fit by sampling careers. A quantitative decomposition places a lower bound on the uncertainty channel's contribution to the gap in unemployment rates between college and non-college workers at 24%.

## PUBLICATIONS

The Underemployment Trap (with Paul Jackson), *forthcoming at Journal of Monetary Economics*, 2024

**Abstract:** Many college graduates are underemployed, i.e., work in occupations that do not require a college degree. We document that underemployed workers are less likely to transition to a college occupation the longer they are underemployed and that longer underemployment histories are associated with lower wages in college occupations. To explain these findings, we develop a directed search model with unobserved heterogeneity, occupation-specific human capital, and on the job search. Workers are uncertain about their suitability for college jobs and learn through search. Underemployment is generated by search and information frictions, as workers with a low expected job-finding probability in college occupations self-select into underemployment. Once underemployed, workers' college occupation-specific human capital decays. A quantitative decomposition shows that unobserved heterogeneity explains most of the duration dependence in underemployment, and that information frictions play a significant role in both the existence of underemployment and the resulting duration dependence.

Internet Linkage and International Trade: From the Perspective of Risk Alleviation (with Zengxi Hu), *The World Economy*, 2024, 47, 3551–3577.

**Abstract:** Extensive research has studied the effect of the Internet on trade, yet little is known about its role in trade facilitation through risk alleviation. This research investigates the facilitation of Internet linkage on export, particularly through the novel channel of risk alleviation. Theoretically, this paper introduces a gravity model augmented with export risk to establish the stimulus of Internet linkage on exports. Empirically, this paper uses inter-domain hyperlinks as a proxy for Internet linkage in 2009, uncovering a statistically significant positive impact of Internet linkage on exports. Notably, there is a 27.8% increase in exports in reaction to a doubling of the Internet linkage intensity. By employing various techniques, we meticulously address potential endogeneity issues and substantiate the risk-alleviation mechanism at both the country and product levels. Particularly, we find that exports to riskier countries and of riskier products benefit more from the Internet linkage. This study sheds

new light on the novel channel through which the Internet promotes exports, enriching the existing literature in this field.

## WORKING PAPERS

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### Procyclical Wage Losses from Skill Mismatch

**Abstract:** This paper investigates the cyclicity of wage losses from skill mismatch and the underlying mechanisms. Using NLSY97 data, I find that wage losses due to skill mismatch are procyclical, with a one percentage point increase in the unemployment rate leading to a 1.3% reduction in wage losses, equivalent to a 14.6% recovery. This effect is more pronounced in industries and occupations with higher training incidence, and training provision itself follows a procyclical pattern. To explain these findings, I develop a directed search model with endogenous training that encompasses two channels: the productivity channel and the training channel. The model demonstrates that declines in labor productivity and reduced training during recessions collectively alleviate wage losses from skill mismatch. This paper sheds light on the cyclicity of mismatch costs and how fundamental labor productivity and cyclical human capital investment interact to shape them.

## (SELECTED) WORK IN PROGRESS

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**Lifelong Gains from a Strong Start: Early Career Fit, Learning, and the College Wage Premium,**  
with Paul Jackson (NUS)

## TEACHING AND RESEARCH ASSISTANT

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*Teaching Assistant*, Department of Economics, National University of Singapore

EC6102 Advanced Macroeconomics Theory (Ph.D. Course)	Spring 2023, Spring 2022
EC5102 Macroeconomics Theory (Graduate Course)	Fall 2022

*Exam Grader*, Department of Economics, National University of Singapore

EC2102 Macroeconomic Analysis I (Undergraduate Course)	Fall 2024
EC2303 Foundations for Econometrics (Undergraduate Course)	Fall 2021
EC2101 Microeconomic Analysis I (Undergraduate Course)	Fall 2021

*Research Assistant*, Department of Economics, National University of Singapore

Research Assistant for Dr. Paul Jackson	January 2023 - April 2023
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## TALKS AND CONFERENCES

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2022: Asian Econometric Society Meeting 2022 (Virtual)

2023: Asian Econometric Society Meeting 2023, Beijing; Asian Econometric Society Meeting 2023, Singapore; Econometric Society Australasian Meeting, Sydney; NUS Macro Brownbag; OzMac, Melbourne

2024: Southwest University of Finance and Economics; 7th ICCDS (SJTU); Asian Econometric Society Meeting 2024 (ZJU); China Labor Economists Forum (SUFE); 2024 Search and Matching Workshop in the Asia-Pacific (NUS)

## SERVICE

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<i>Coordinator</i> , NUS Macro Workshop	2024
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## AWARDS AND SCHOLARSHIPS

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Department Scholarship, NUS	2025
Research Incentive Award, NUS Econ Department	2023
Conference Funding For Graduate Students (SGD2,000), NUS	2023
Research Scholarship, NUS	2020 - 2024
Chinese Government Scholarship (GBP13,200), CSC	2018 - 2019

Honor Graduate, CUFÉ	2018
Overseas Education Scholarship (RMB50,000), CUFÉ	2018
Academic Excellence Award (Top 4%), CUFÉ	2015, 2016, 2017

## MISCELLANEOUS

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**Programming:** Stata, Matlab, Mathematica,  $\text{\LaTeX}$   
**Language:** Mandarin (native), English (proficient)  
**Personal:** Born in 1996, female, Chinese

## REFERENCES

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**Dr. Paul Jackson** (Advisor)  
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**Dr. Ying Feng**  
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**Dr. Ronald Wolthoff**  
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University of Toronto  
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