SIYU SHI

480-875-4938 ◇ sshi25@asu.edu ◇ https://www.shisiyu.com/

ARIZONA STATE UNIVERSITY

Placement Director: Gustavo Ventura gustavo.ventura@asu.edu 480-965-5881
Placement Coordinator: Laura Talts ltalts@asu.edu 480-727-7931

EDUCATION

PhD in Economics, Arizona State University, 2018 to present
Thesis Title: Essays on Technological Change and Inequality
Expected Completion Date: May 2023
References:

Gustavo Ventura (Chair)	Alexander Bick	Bart Hobijn
Arizona State University	Arizona State University	Federal Reserve Bank of Chicago
480-965-5881	480-965-3754	312-322-8103
gustavo.ventura@asu.edu	alexander.bick@asu.edu	bart.hobijn@barthobijn.net

MS in Economics, University of Wisconsin-Madison, 2016-2018
BA in Economics, Fu Jen Catholic University, 2012-2016

RESEARCH FIELDS

Primary fields: Macroeconomics, Technological Change, Inequality
Secondary field: Labor Economics

TEACHING EXPERIENCE

Instructor
Intermediate Macroeconomics, Arizona State University, Summer 2022
Teaching assistant
Macroeconomics Analysis I, Arizona State University, Fall 2019, Fall 2020
Macroeconomics Analysis II, Arizona State University, Spring 2020, Spring 2021

RESEARCH EXPERIENCE

Research assistant to Alexander Bick, Arizona State University, 2019-2022

SEMINARS/CONFERENCES

2022 ASU Macro Workshop, Asia Meeting of the Econometric Society, ASU Reunion Conference, SEA 92nd Annual Conference*
2021 ASU Macro Workshop
(*: scheduled)

HONORS, SCHOLARSHIPS, AND FELLOWSHIPS

2022 Distinguished Economics Graduate Instructor
2019 Hardison Award for Best Performance in Qualifying Exam: Macroeconomics and Microeconomics

COMPUTATIONAL SKILLS

Python, Stata, Matlab

RESEARCH PAPERS

"Technology Usage and Life-cycle Earnings", **Job Market Paper**

Abstract: How does technology usage affect earnings growth and earnings inequality over the life-cycle? I construct a novel index to identify technology usage at the individual level using occupations as a proxy, and document technology usage patterns over the life-cycle. My reduced-form estimate suggests that technology usage accounts for one-third of the growth in life-cycle inequality. I then develop a life-cycle model with a college decision, technology choices, and human capital investments to quantify the relative importance of technology. The model features rich interactions between technology and human capital such that human capital accumulation facilitates technology upgrading and the usage of advanced technologies also spurs human capital investment. This reinforcement mechanism amplifies earnings inequality and growth over the life-cycle. I find that technology usage contributes to 31% of the growth in mean earnings and 46% of the growth in life-cycle inequality. I also evaluate policy implications of non-linear taxation on labor earnings. When the economy switches to a progressive tax at European levels, the growth in mean earnings decreases by 23% and the college attainment rate drops by 7 percentage points. However, the effect on life-cycle inequality is relatively small.

"Life-cycle Skill Premiums across Cohorts"

Abstract: I document and investigate life-cycle profiles of skill premiums across cohorts. My empirical analysis shows that younger cohorts have steeper growth in the skill premium before age 40 but flatter growth after 40. I use a human capital investment model to account for the cross-cohort variation in skill premium profiles. The results indicate that the flattened growth after age 40 is caused by the drop in human capital (of high-skill workers) near the end of the life cycle. Besides, the magnitude of life-cycle growth in the skill premium is mainly driven by the relative skill price, which is the log ratio of wage rates between high-skill workers and low-skill workers.

"The Role of Information Technology behind the Rise of Earnings Inequality", work in progress

Abstract: It is a well-known fact that earnings inequality has increased significantly over the past five decades. In this paper, I link this phenomenon to information technology usage. I investigate the contribution of this channel via a novel measurement on technology exposure at the individual level. I find that the usage of information technology is positively associated with individual earnings, and that this correlation becomes stronger over time. In particular, a one standard deviation increase in technology usage raised real annual earnings by 12% in 1980, while this *return to technology* has increased to 18% in 2019. Furthermore, I find that working experience complements technology usage as the return to technology increases with years of experience. I apply Recentered Influence Functions (RIFs) regression to decompose the growth in earnings inequality and quantify the contribution of information technology.I find that information technology accounts for 31% of the growth in overall earnings inequality (variance of log earnings) from 1968 to 2019. In line with the findings in the polarization literature, I find that information technology has asymmetric effects over the earnings distribution: it increases earnings for workers in the bottom and the top of the technology distribution but decreases earnings for workers in the middle. Moreover, information technology contributes to inequality growth mostly from the rising return to technology instead of compositional effects, i.e., the changes in the distribution of information technology usage.