

Discussion

Education and Unequal Regional Labor
Market Outcomes

by Katheryn Russ and Jay Shambaugh

David Autor

Ford Professor of Economics at MIT

Federal Reserve Bank of Boston Conference Session

Rethinking regional responses to economic shocks

October 4, 2019

The Big Question

Interpreting shocks and persistence

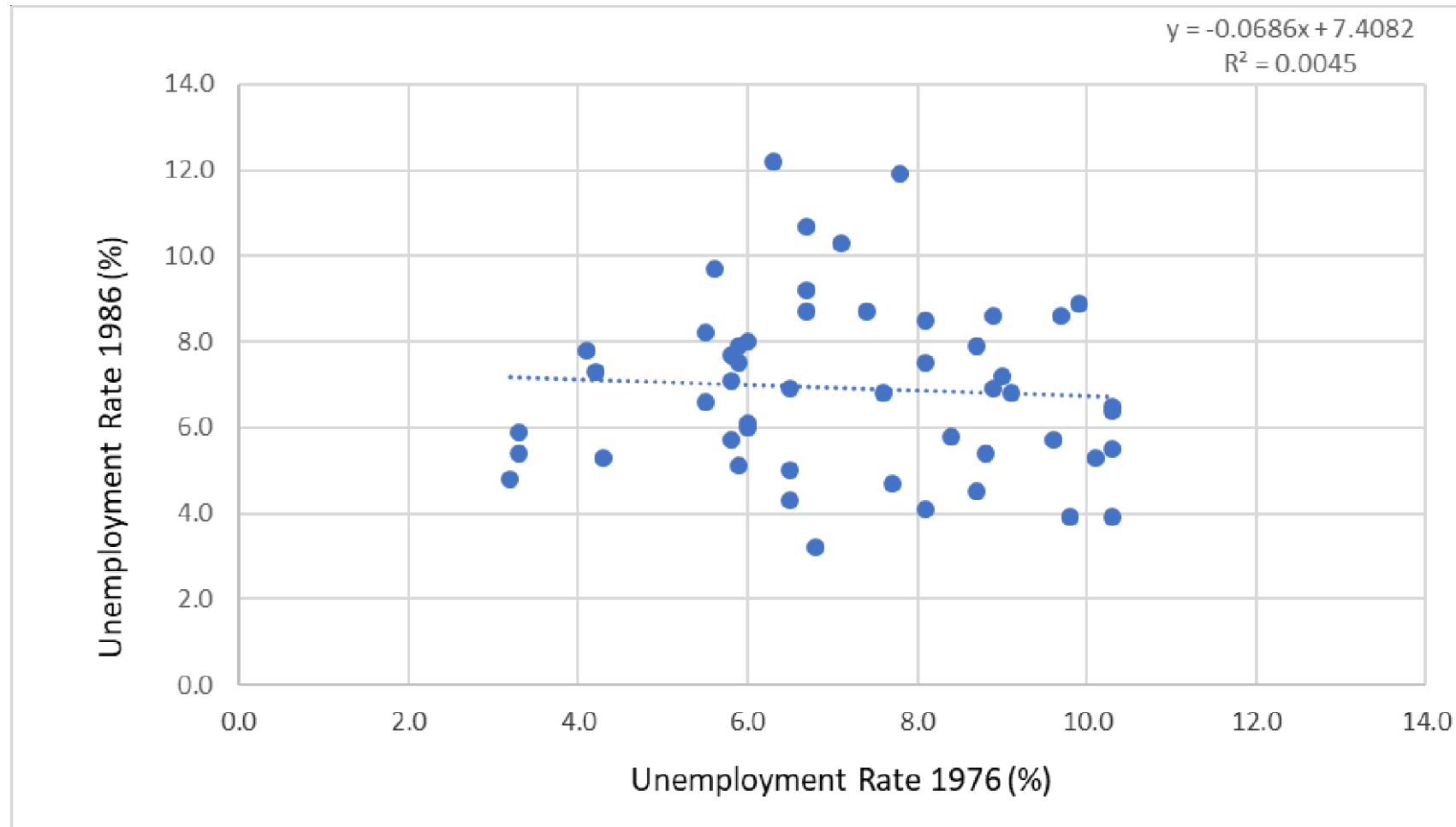
- *Was* something special about the 'China Shock'?
- Or *is* something special about the shocked places?

Shocks, Persistence, and Place

1. **Context – Persistence of unemployment since mid-1980s**
2. The decline of U.S. manufacturing
3. Concentrated, enduring impacts
4. Characterizing ‘China Shocked’ places
5. The China Shock and the changing geography of work

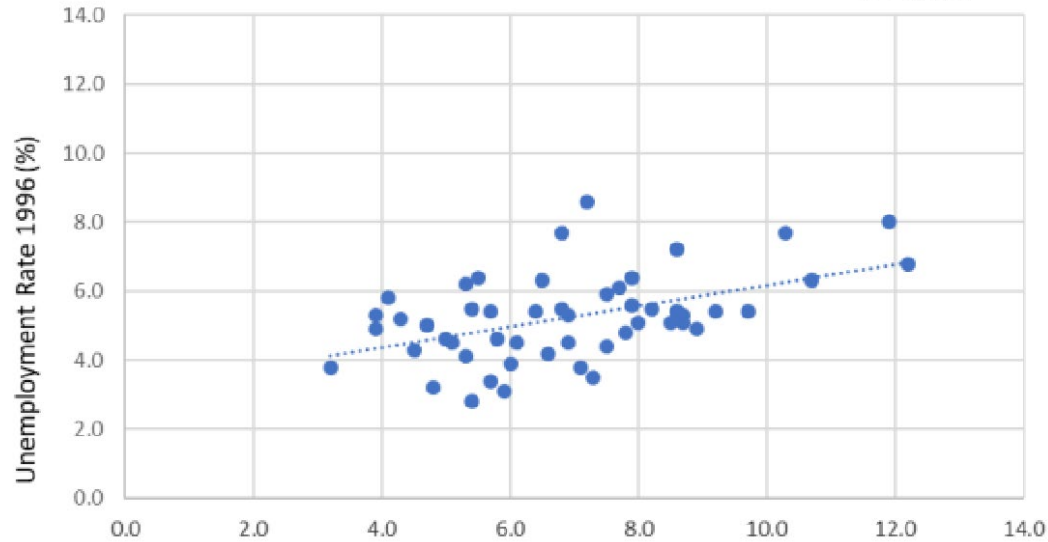
Conventional Wisdom: *Non-Persistence* of Unemployment: Changes in State Unemployment Rates 1976-1986

Changes in State Unemployment Rates 1976-1986

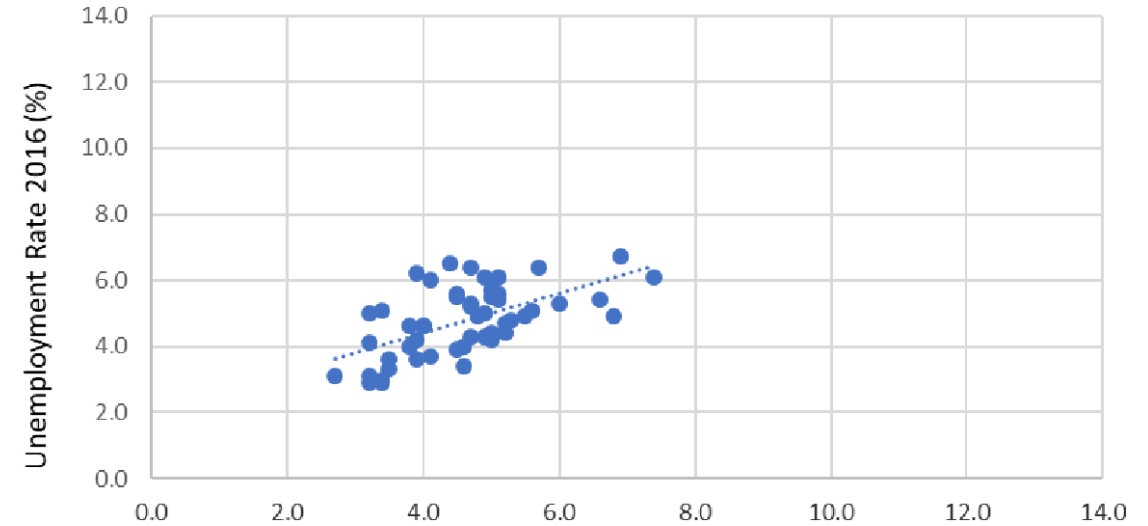


But Look at the Next Three Decades: Persistence (*Bigley!*)

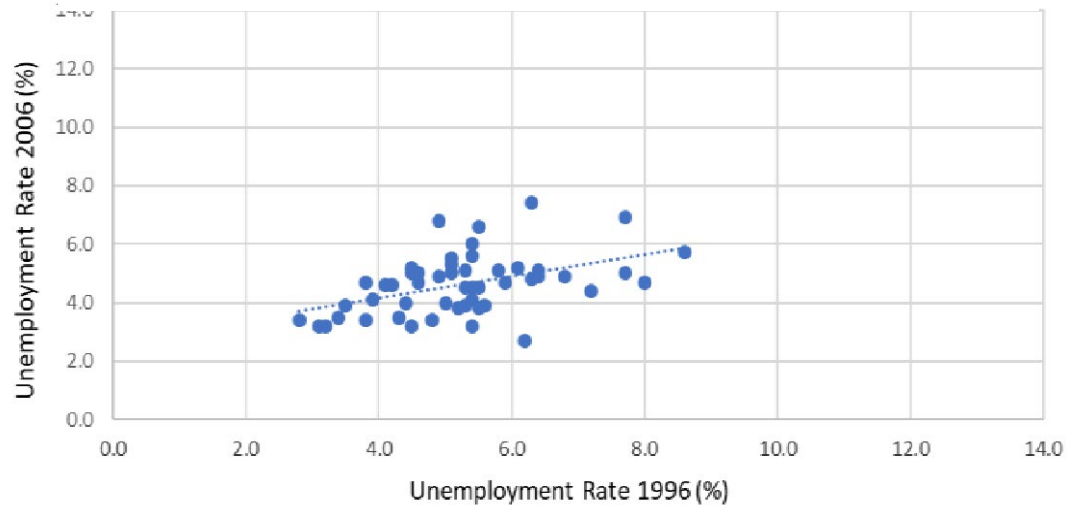
1986 vs. 1996



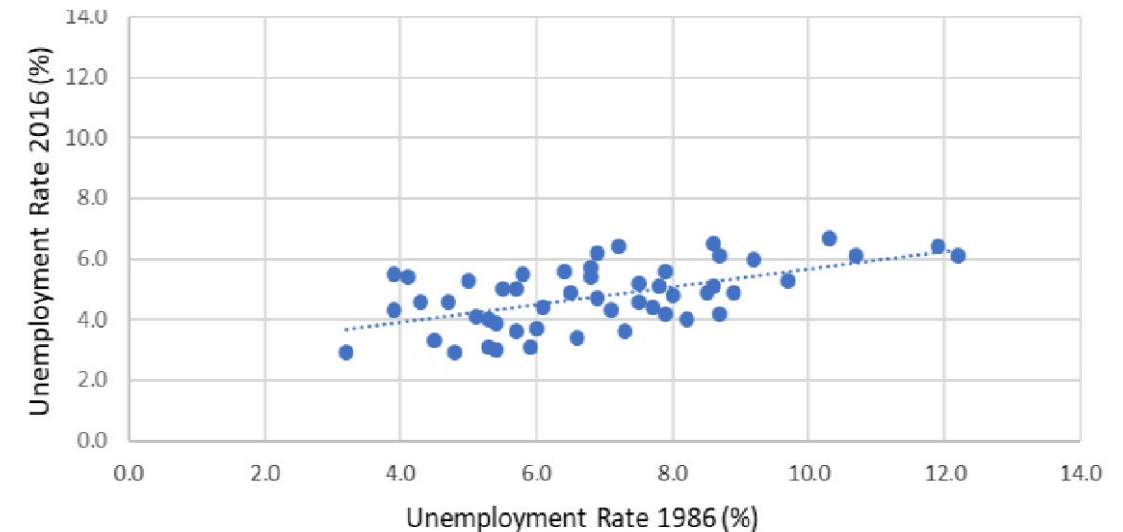
2006 vs. 2016



1996 vs. 2006



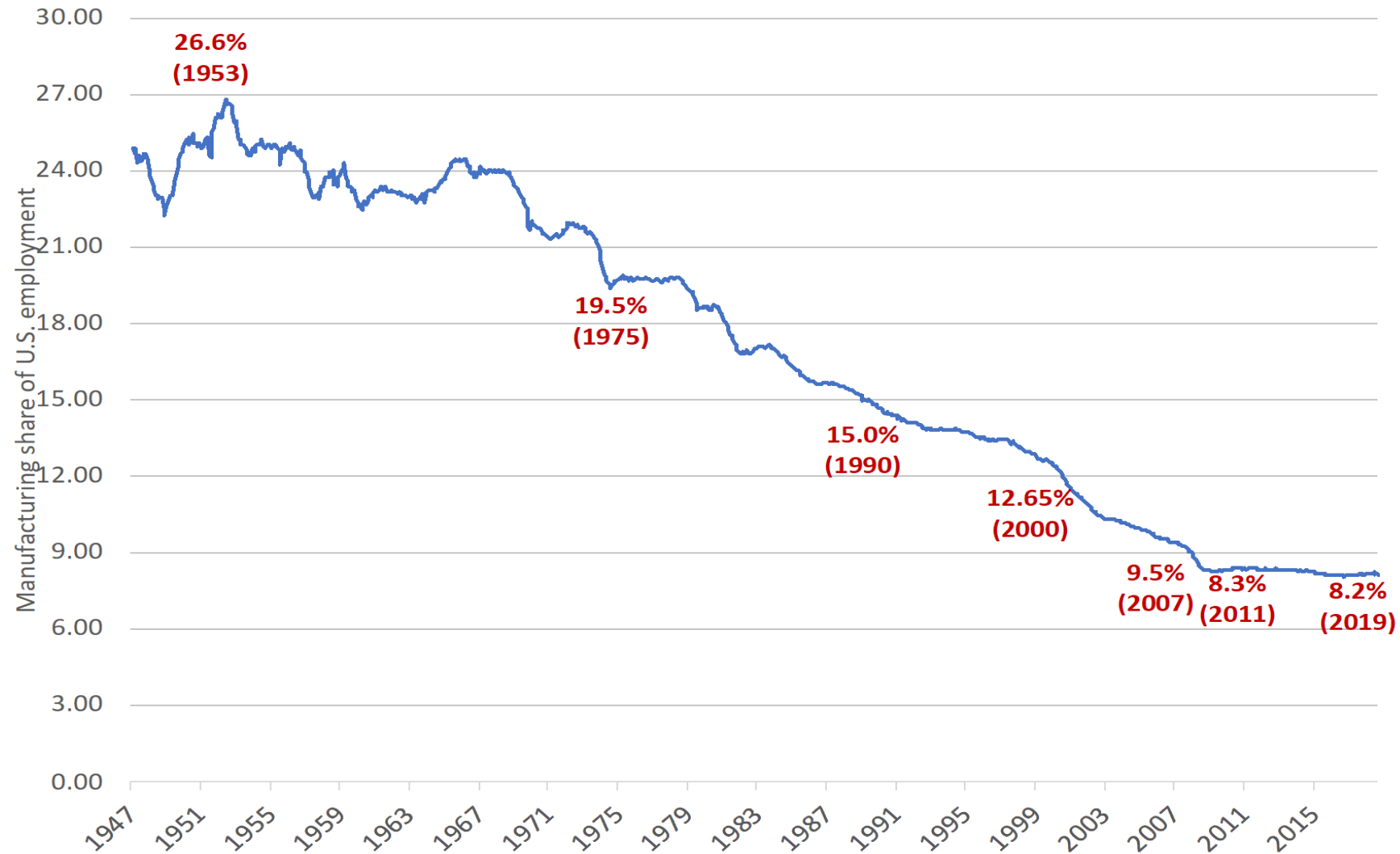
1986 vs. 2016



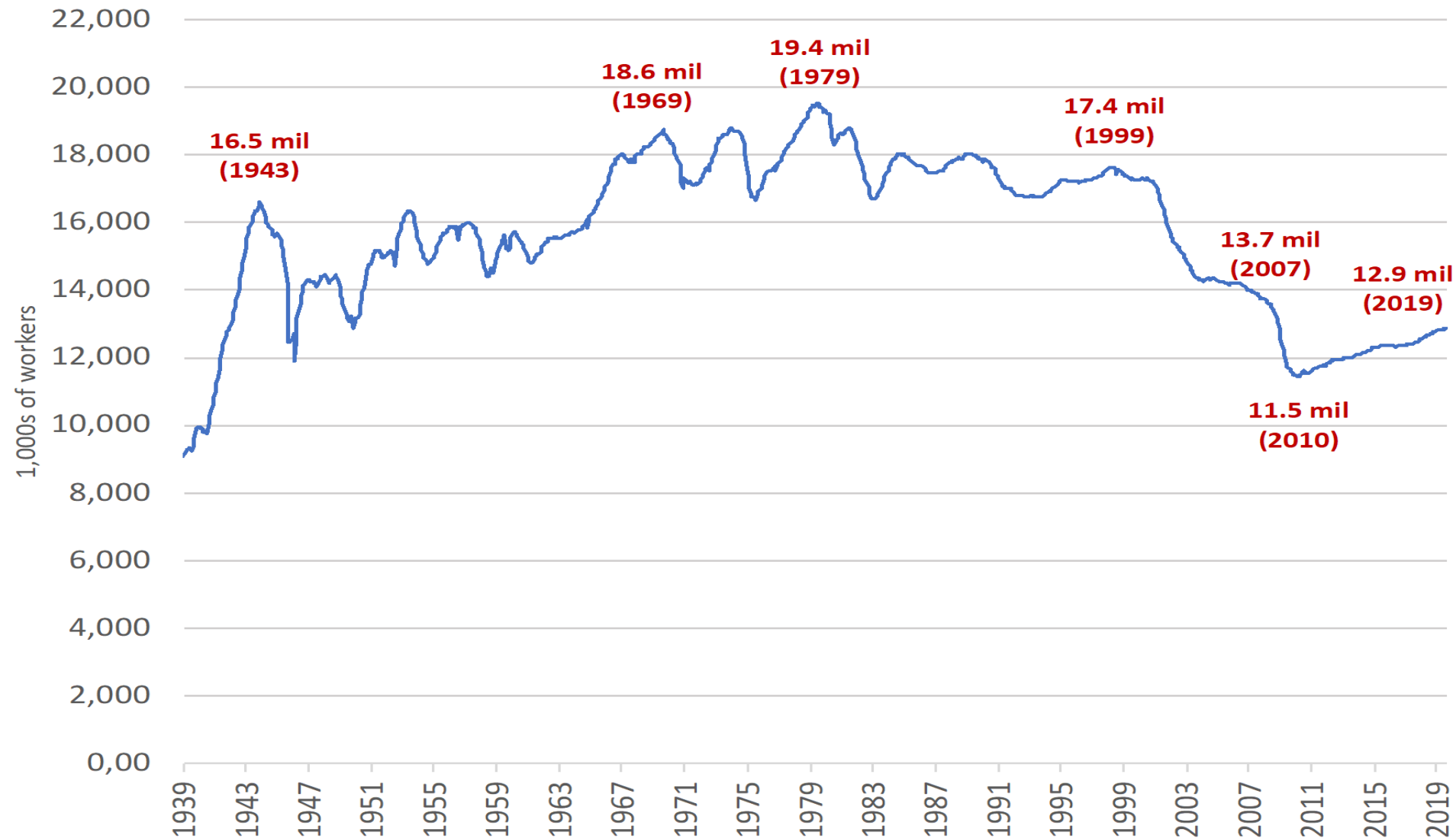
Shocks, Persistence, and Place

1. Context – Persistence of unemployment since mid-1980s
- 2. The decline of U.S. manufacturing**
3. Concentrated, enduring impacts
4. Characterizing ‘China Shocked’ places
5. The China Shock and the changing geography of work

A Long Decline: The Share of U.S. Employment in Manufacturing, 1939 – 2019



U.S. Manufacturing Employment Fell by 20% between 1999 and 2007, and by 33% between 1999 and 2010



Shocks, Persistence, and Place

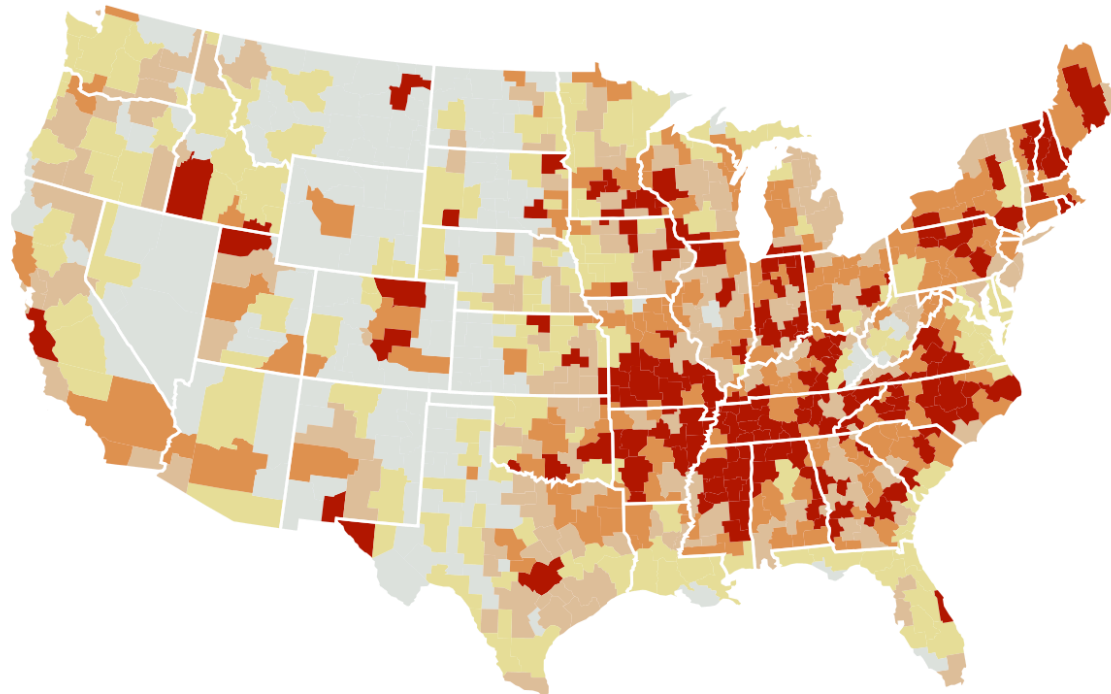
1. Context – Persistence of unemployment since mid-1980s
2. The decline of U.S. manufacturing
- 3. Concentrated, enduring impacts**
4. Characterizing ‘China Shocked’ places
5. The China Shock and the changing geography of work

Concentrated Impact of China Trade Shock: South Atlantic, South Central, Northeast, Great Lakes

Most-affected areas of the U.S.

Colors show which areas were most affected by China's rise, based on the increase in Chinese imports per worker in each area from 1990 to 2007. Hovering over each area on the map will show a demographic breakdown of that area, below, and its most-affected industries, at right.

Most-affected 20% Second-highest 20% Middle 20% Second-lowest 20% Least-affected 20%



Most-affected industries

Most-affected industries,
based on number of areas*

Impact per
worker†

Furniture and fixtures

196 areas

\$44k

Games, toys, and children's vehicles

114 areas

\$488k

Sporting and athletic goods

106 areas

\$82k

Electronic components

87 areas

\$65k

Plastics products

84 areas

\$11k

Motor-vehicle parts and accessories

79 areas

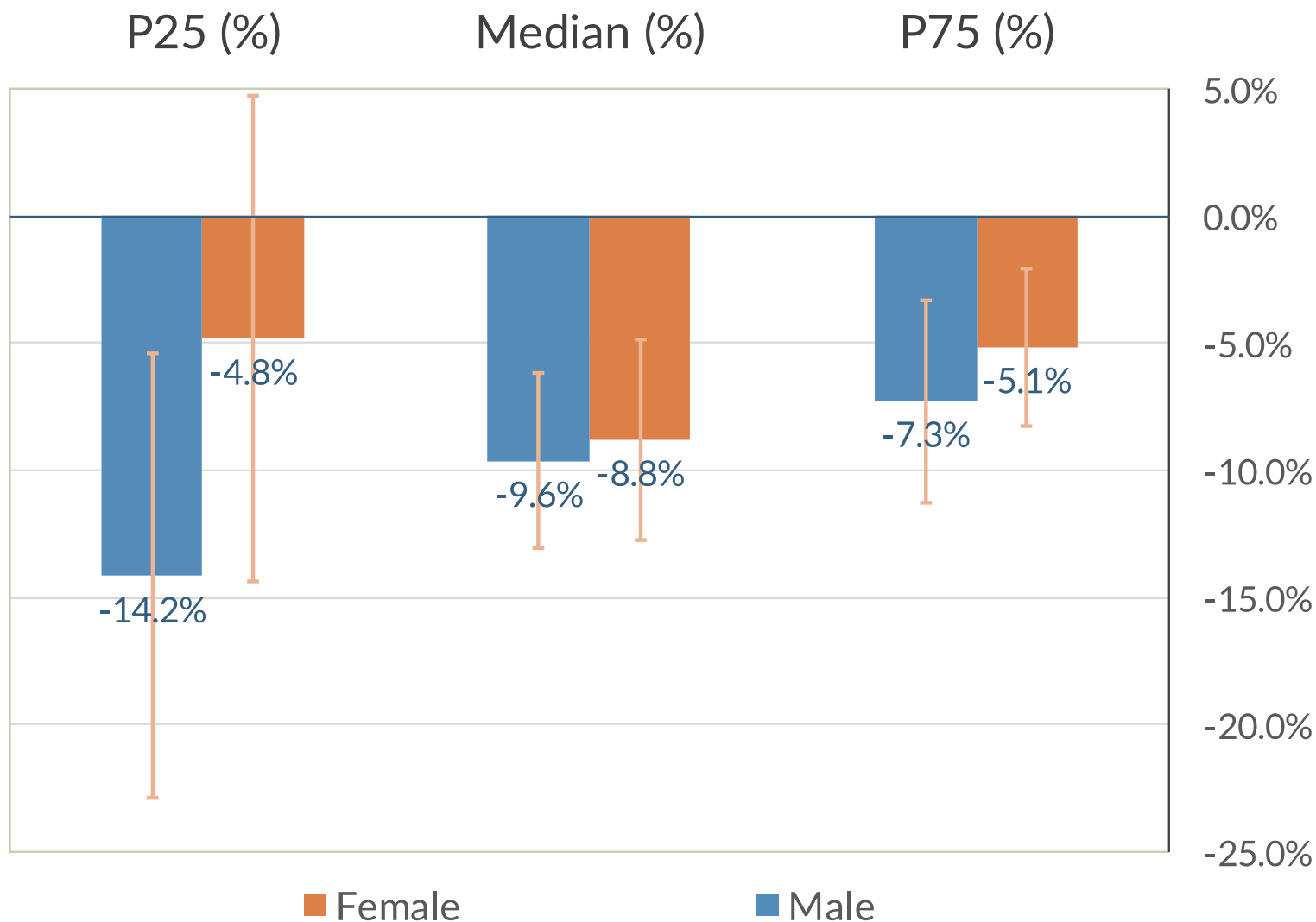
\$12k

Electronic computers

68 areas

\$207k

Impact of a One-Unit Trade Shock on Male and Female Annual Earnings @ P25, P50, and P75



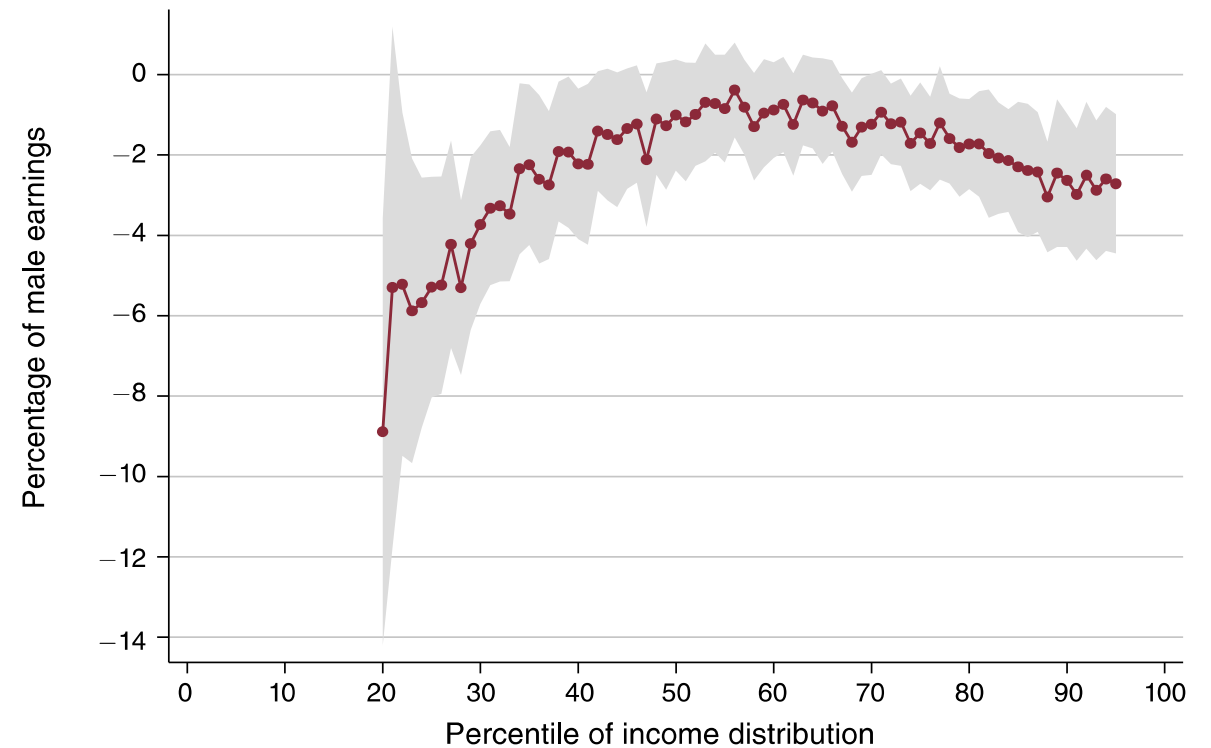
Male and female earnings fall in shocked CZs, but falls especially steep among lower-wage men

Earnings Losses Larger for Men Throughout Distribution Leading to a *Compression* of the M-F Earnings Gap

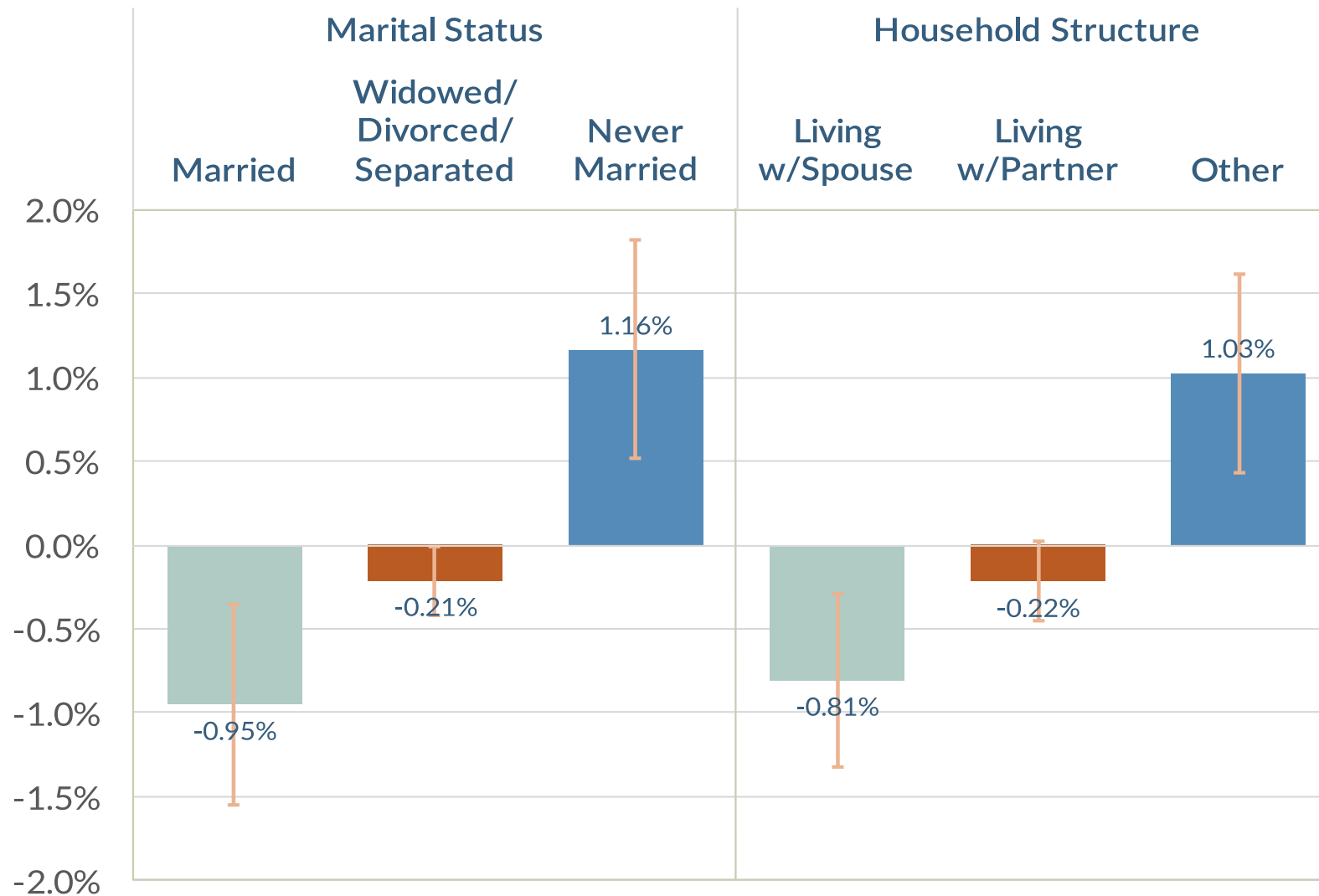
Panel A. Impact on male and female annual earnings by percentile, 1990–2014



Panel B. Impact on male-female annual earnings gap 1990–2014 as a percentage of 1990 male earnings

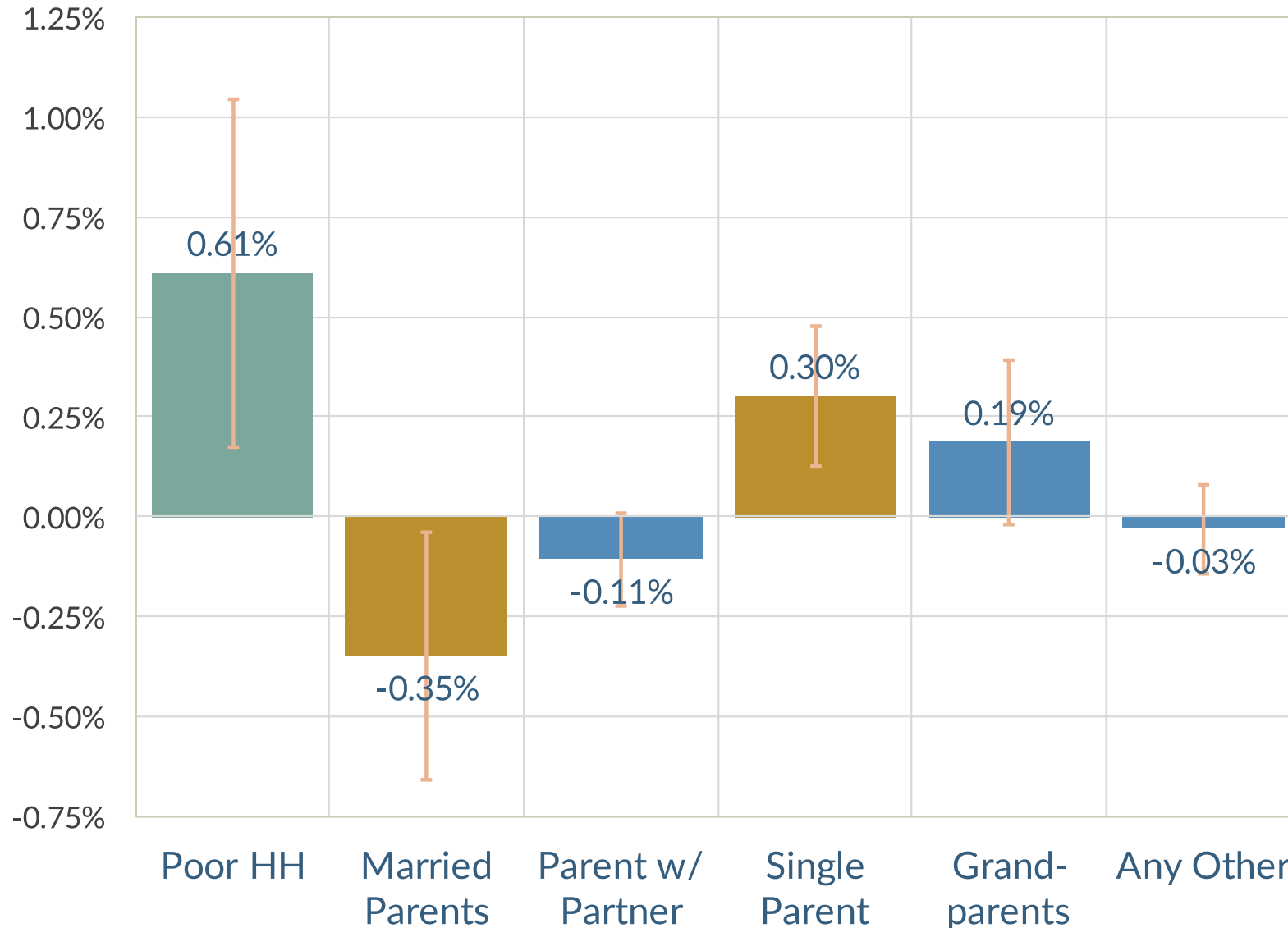


Impacts Beyond Labor Market: Effect of One-Unit Trade Shock on Marital Status, HH Structure of Adults Ages 18 to 39



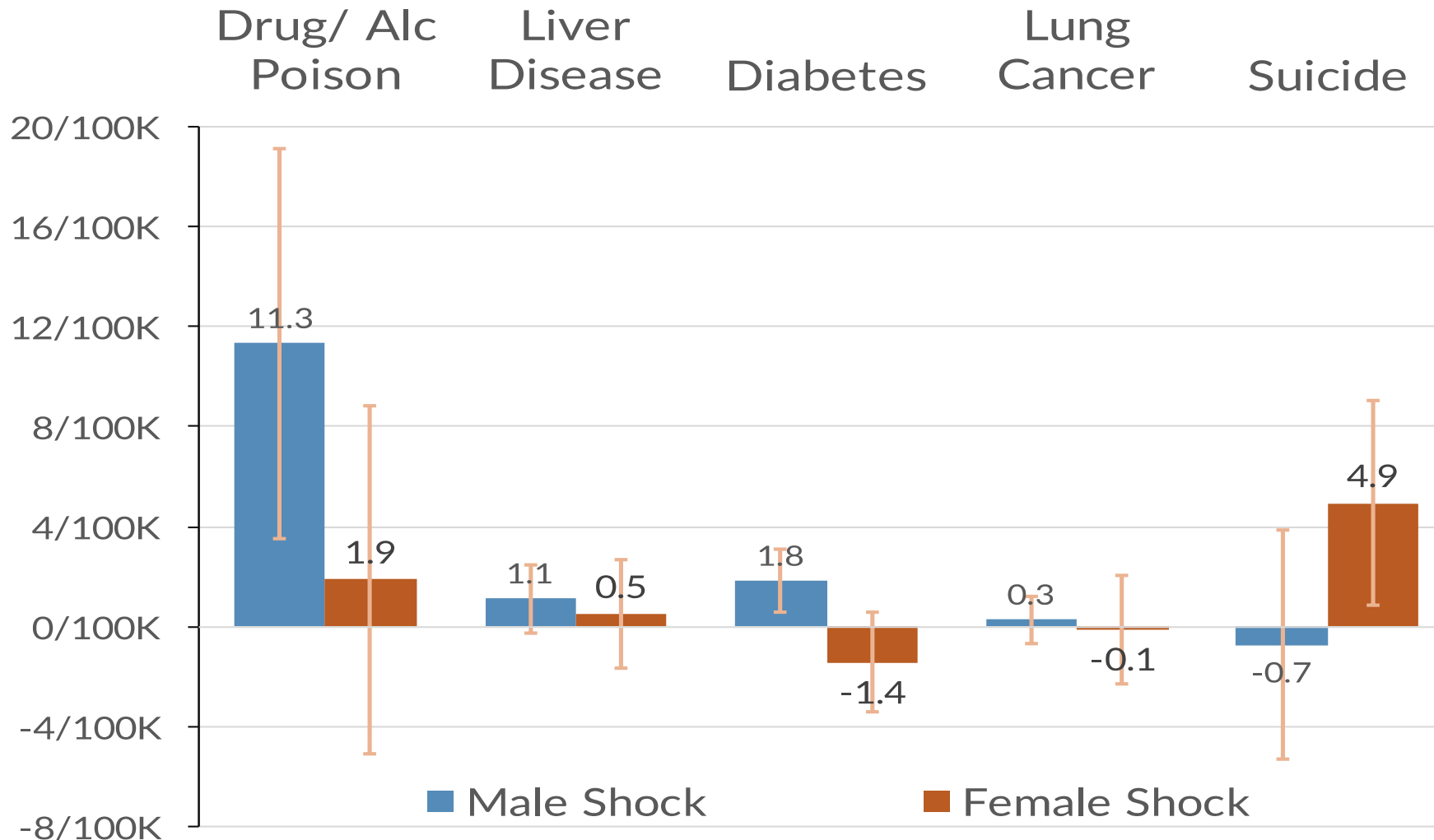
In affected region, fraction of young adults who are ever married, living with spouse, or living with partner falls

Kids' Outcomes: Trade Shock Raises Fraction of Children Under 18 Living in Poverty and in Non-Married Households



In affected CZs, fraction of children <18 living in poverty rises sharply; fraction living in two-parent households falls

‘Deaths of Despair’: Shock Leads to Rise in Mortality among Adults Ages 20 – 39 (per 100K Adults)



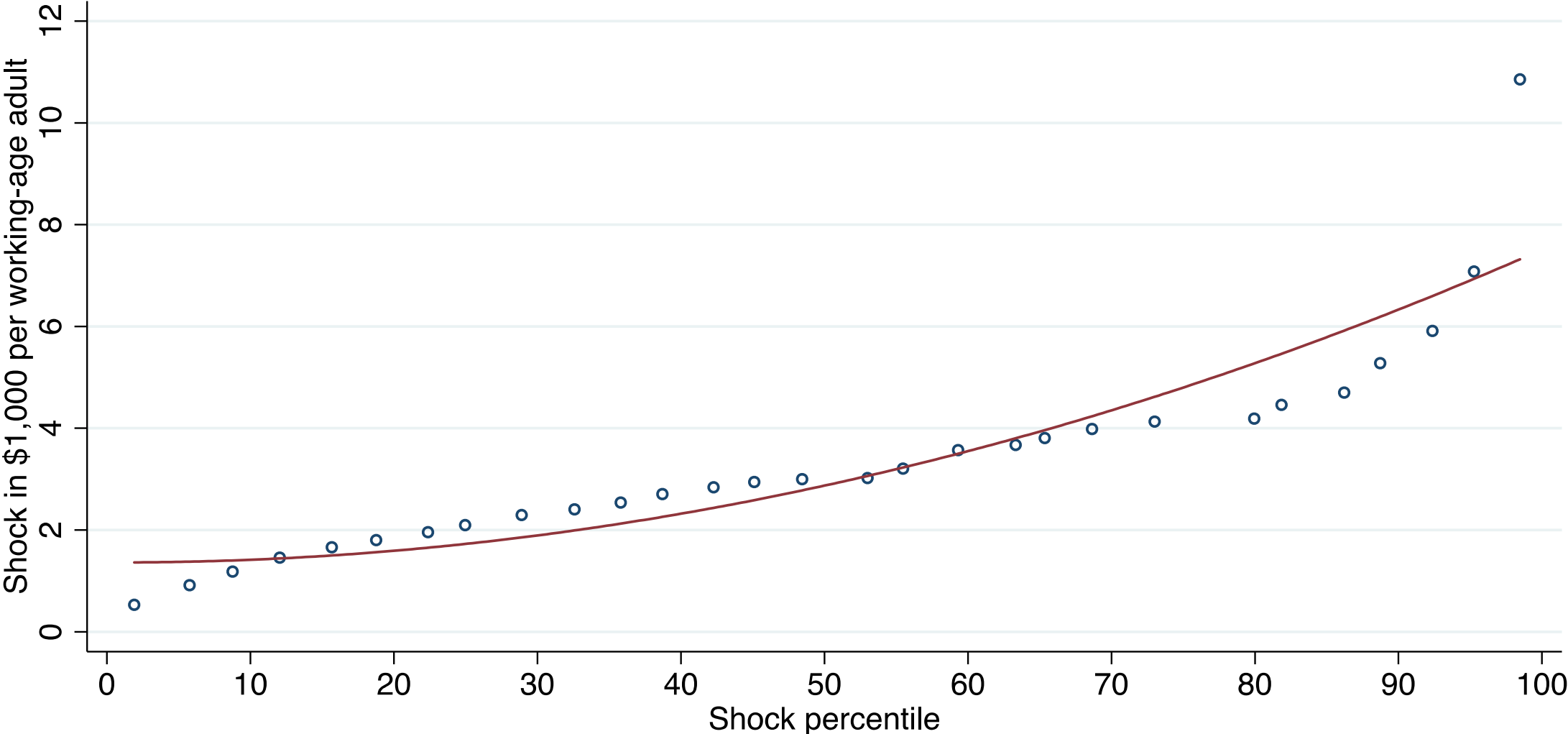
In affected CZs, a significant increase in mortality among young adults – esp. males

Shocks, Persistence, and Place

1. Context – Persistence of unemployment since mid-1980s
2. The decline of U.S. manufacturing
3. Concentrated. enduring impacts
- 4. Characterizing ‘China Shocked’ places**
5. The China Shock and the changing geography of work

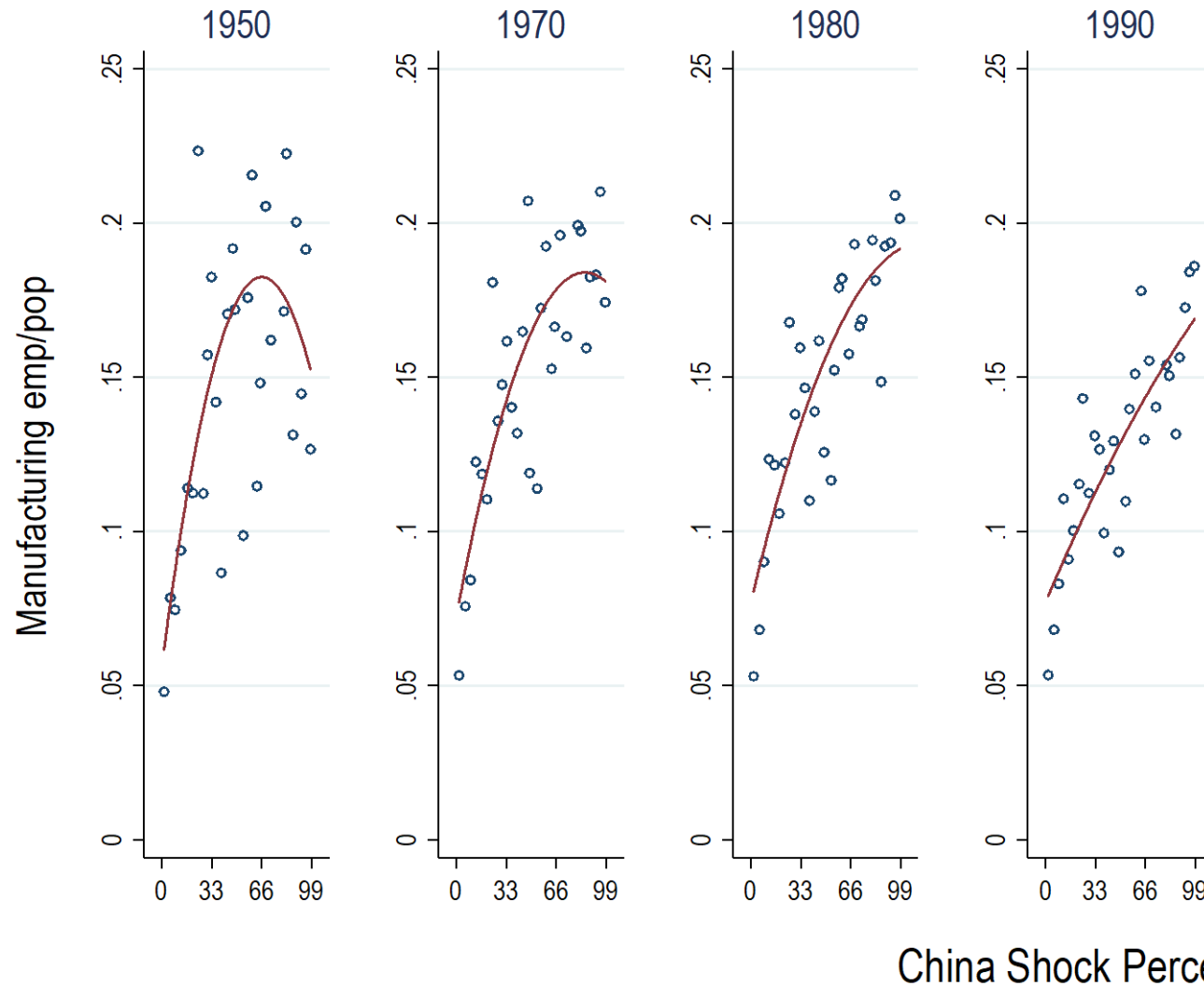
Percentiles of the 'China Shock' – CZ Level Increase in Imports per Working-Age Adult between 1990 and 2007

CZ Level China Shock 1990 - 2007 in \$1,000s/Adult
by CZ Exposure Percentile in 1990



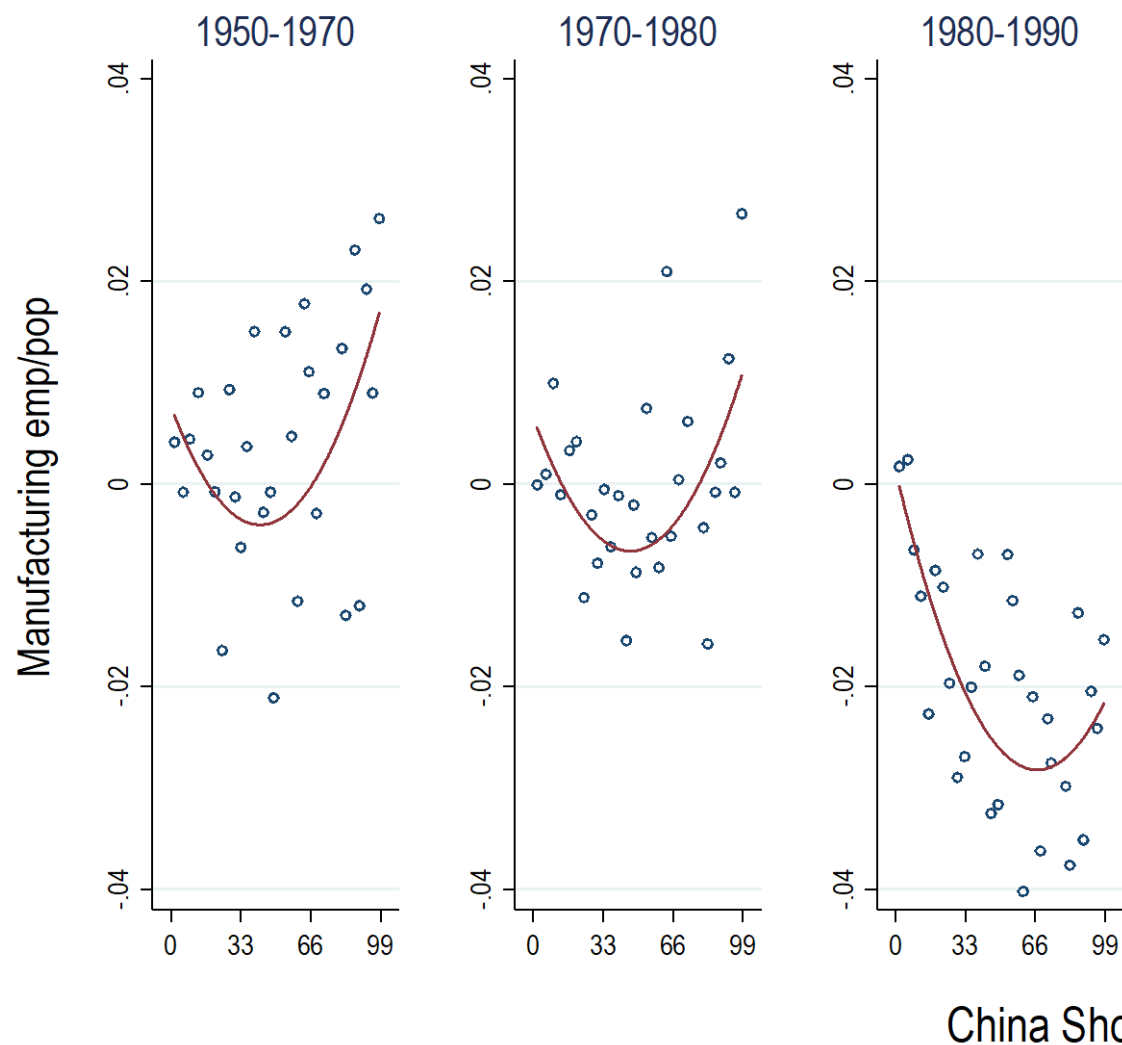
Manufacturing Intensity in China-Shocked CZs, 1950 – 2015

Manufacturing Emp/Pop
vs. China Shock Exposure 1990-2007



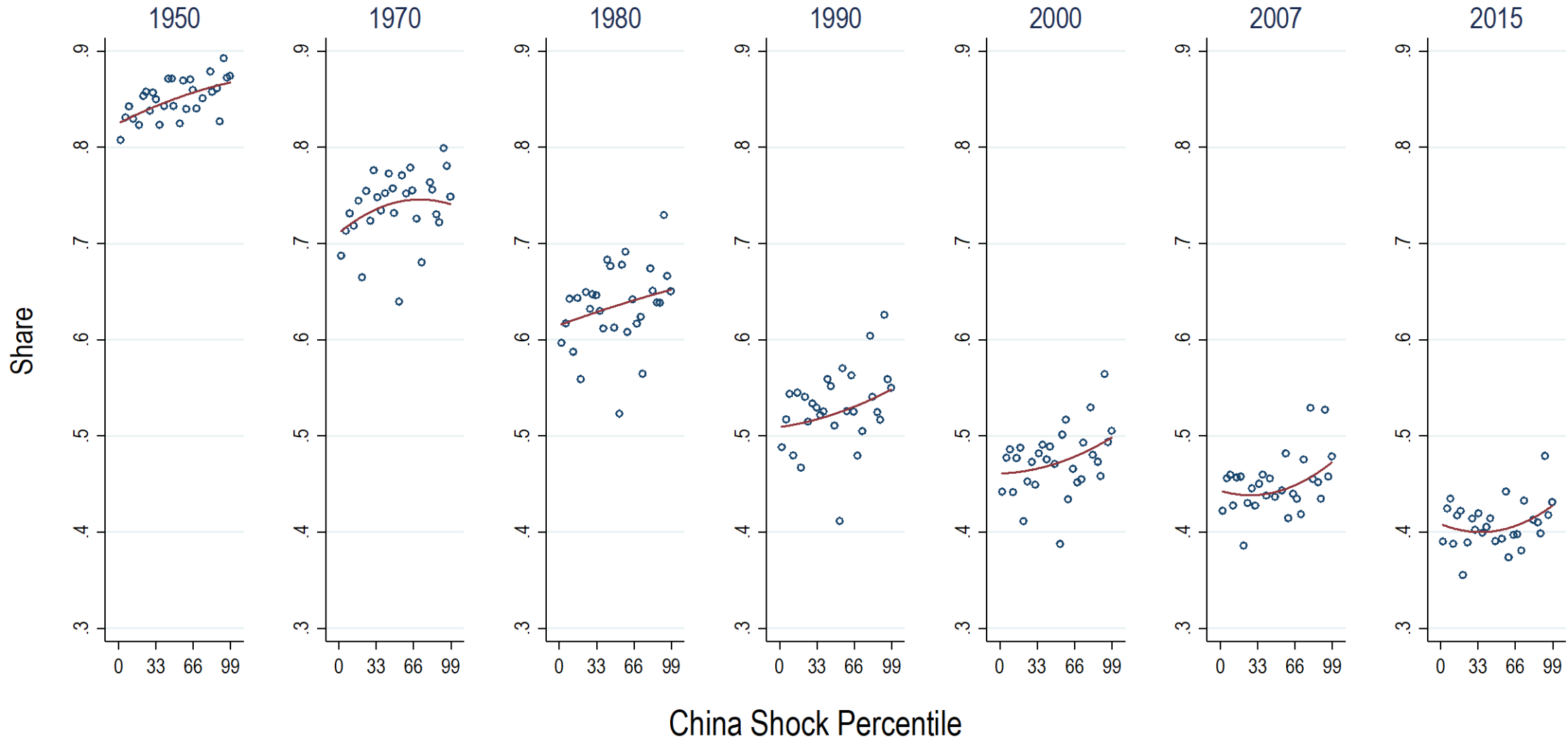
Change in Manufacturing Intensity in China-Shocked CZs, 1950–2015

Decadal Change in Manufacturing Emp/Pop
vs. China Shock Exposure 1990-2007



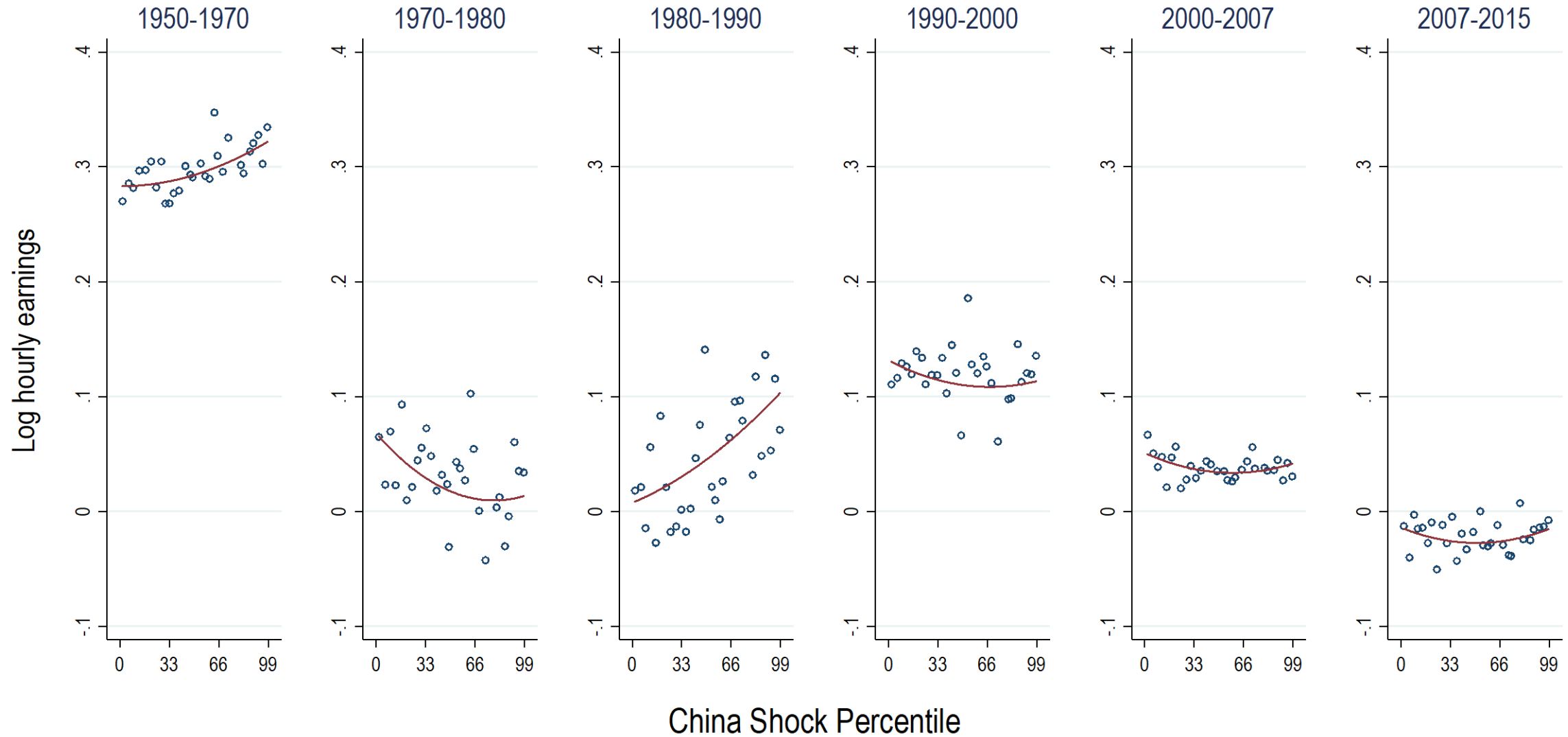
Non-College Share of Adults in China-Shocked CZs, 1950 –2015

Non-College Share of Adults
vs. China Shock Exposure 1990-2007



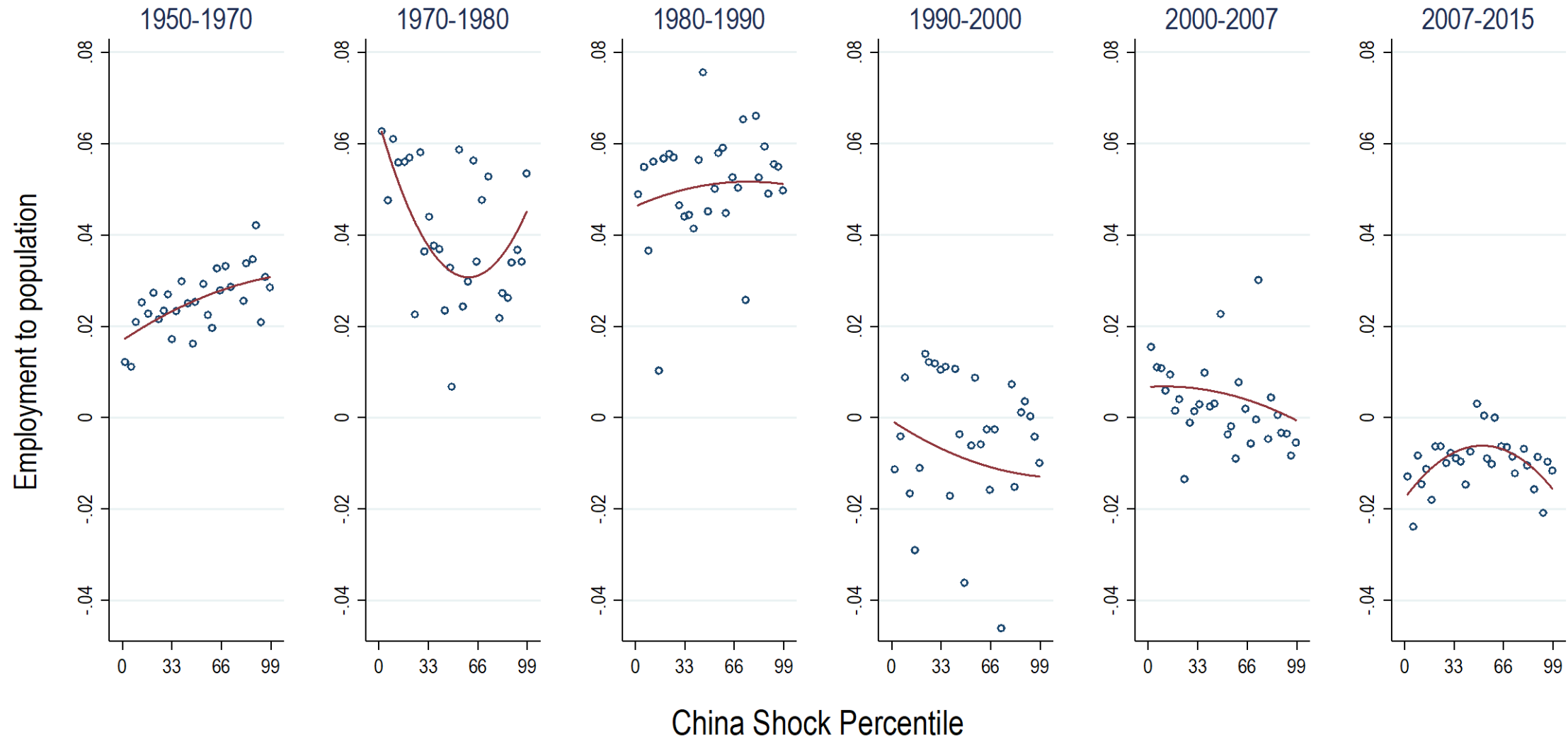
Change in Log Real Hourly Wages in China Shocked CZs, 1950 – 2015

Decadal Change in Mean Log Hourly Wage
vs. China Shock Exposure 1990-2007



Change in Emp/Pop in China-Shocked CZs, 1950 – 2015

Decadal Change in Employment to Population
vs. China Shock Exposure 1990-2007

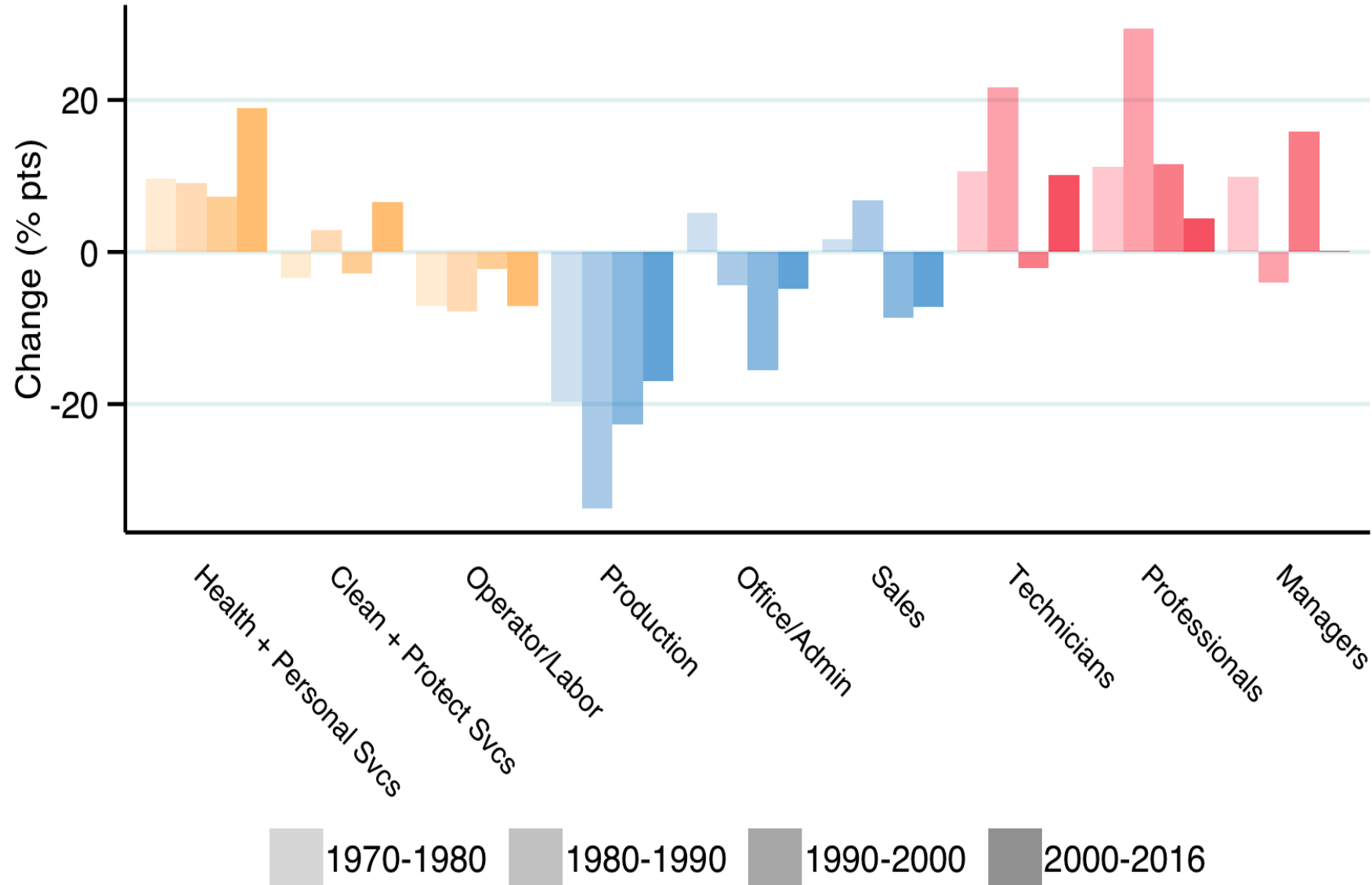


Shocks, Persistence, and Place

1. Context – Persistence of unemployment since mid-1980s
2. The decline of U.S. manufacturing
3. Concentrated. enduring impacts
4. Characterizing ‘China Shocked’ places
- 5. The China Shock and the changing geography of work**

Changes in Occupational Employment Shares, 1970-2016

Working Age Adults (Percent Change Over Decade)



Polarization of Work

High skill jobs

- **Rising** employment in professional, technical and managerial work

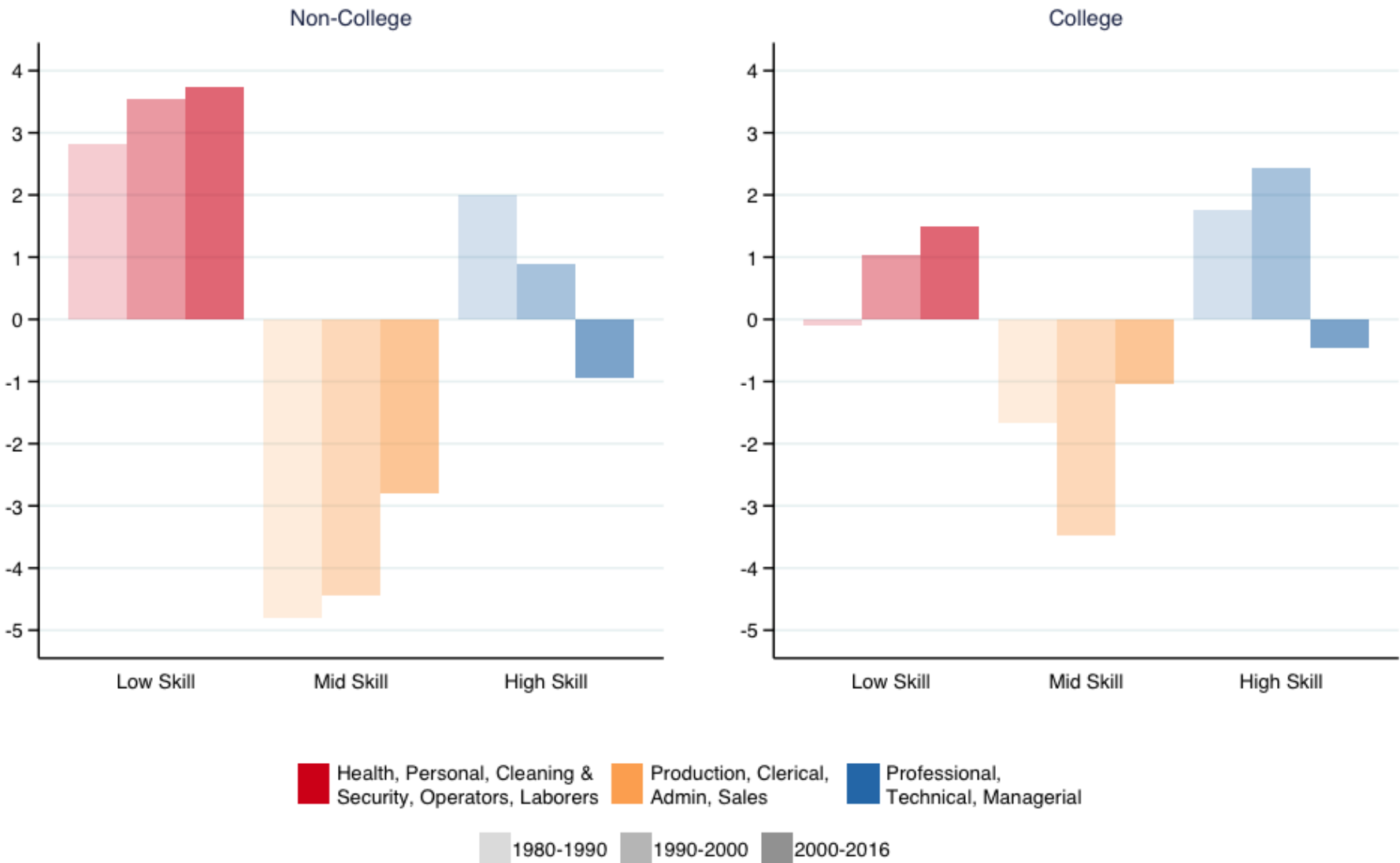
Low skill jobs

- **Rising** employment in personal services — Cleaning, security, recreation, health aides

Mid skill jobs

- **Falling** employment in production work, office/clerical, and sales

Changes in Occupational Employment Shares among Working Age Adults, 1980-2016

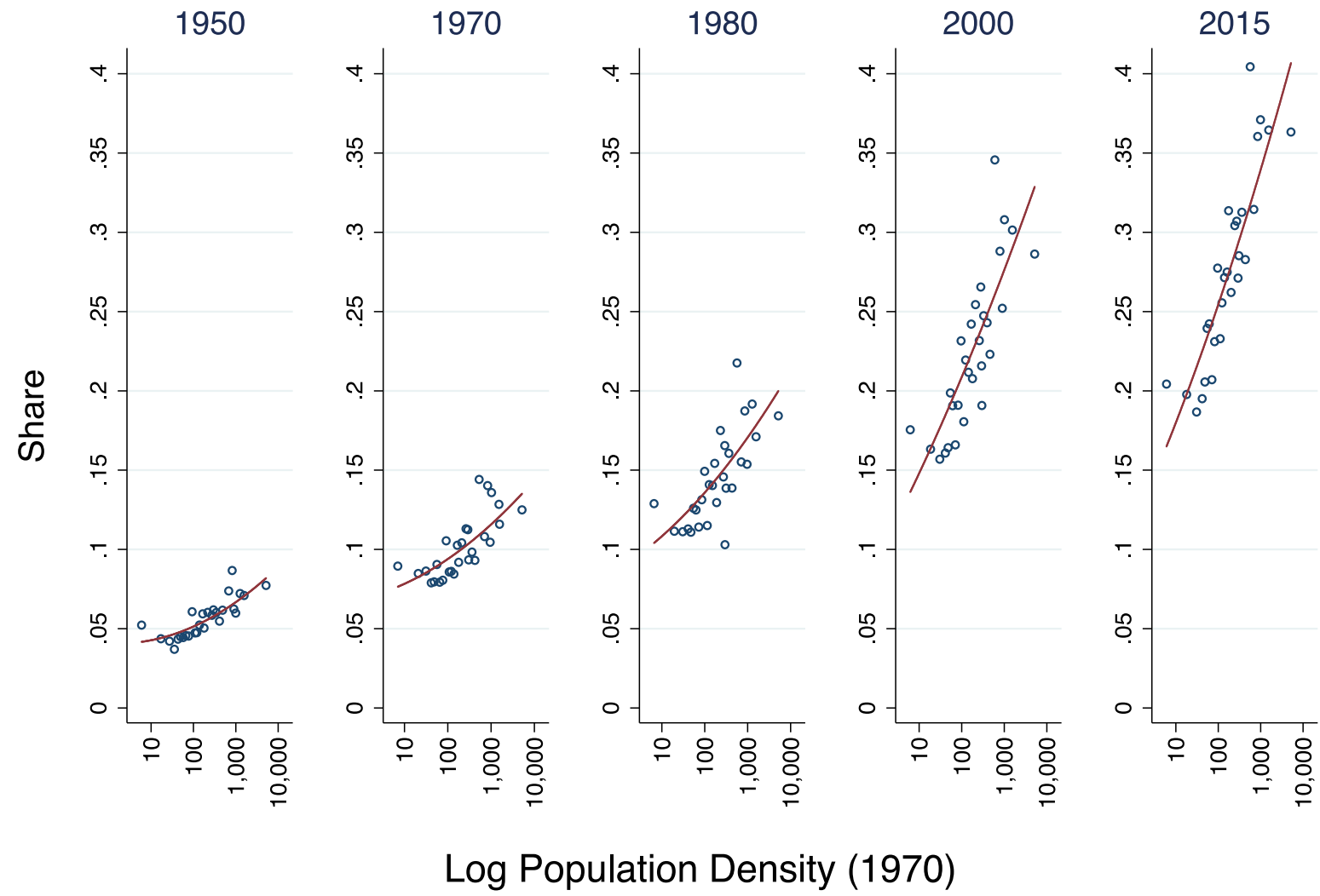


Among College Workers
Most Occupational
Relocation is **Upward**

But Among Non-College
Workers, Occupational
Mobility is Almost
Exclusively **Downward**

Population Density and Educational Attainment

College Educated Share of Working-Age Population

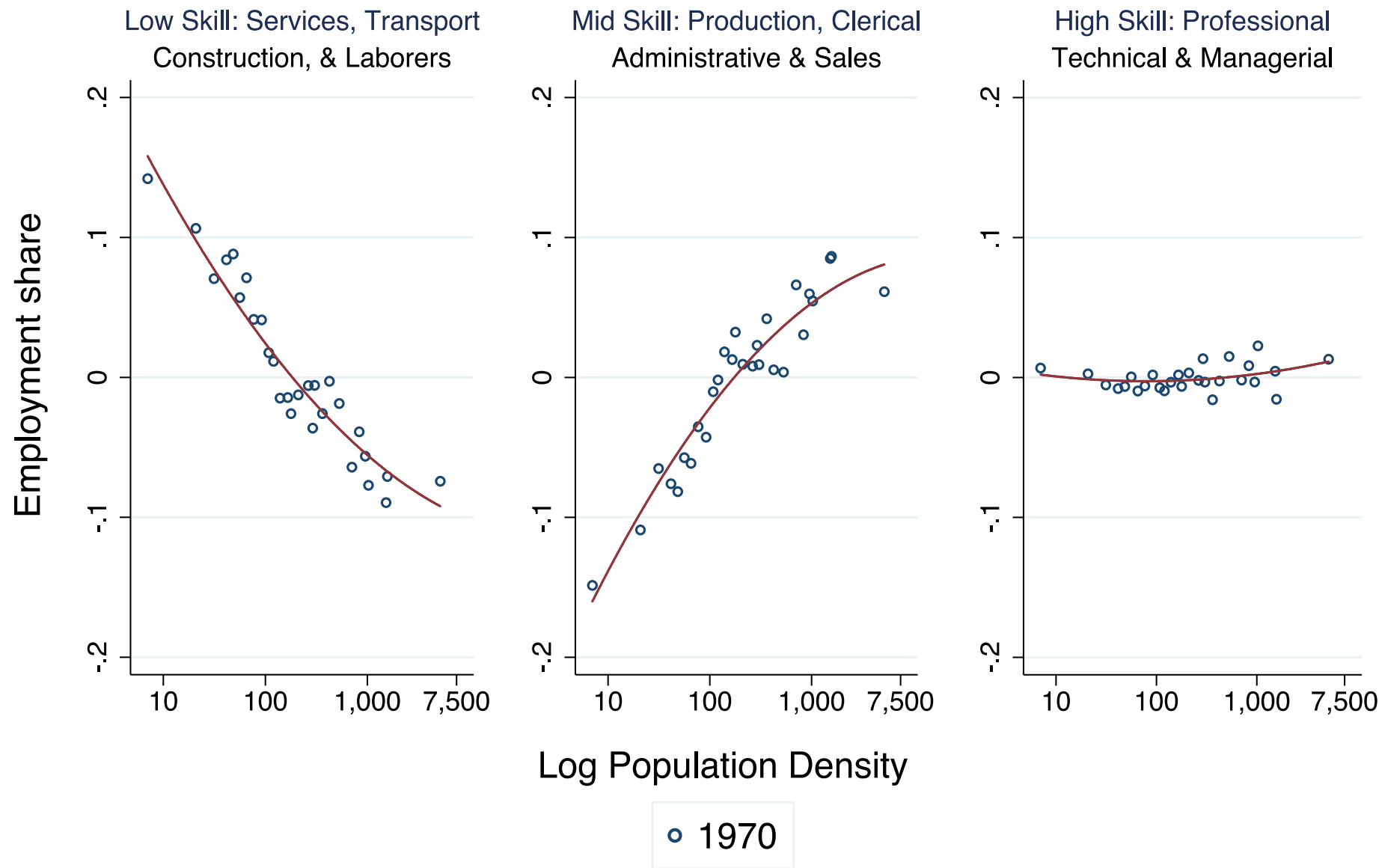


Urban Areas Have Become Much More Educated Since 1980

Urban-Rural College Degree Gap

- 1950:** 5 pct points
- 1970:** 5 pct points
- 1980:** 8 pct points
- 1990:** 13 pct points
- 2000:** 17 pct points
- 2015:** 20 pct points

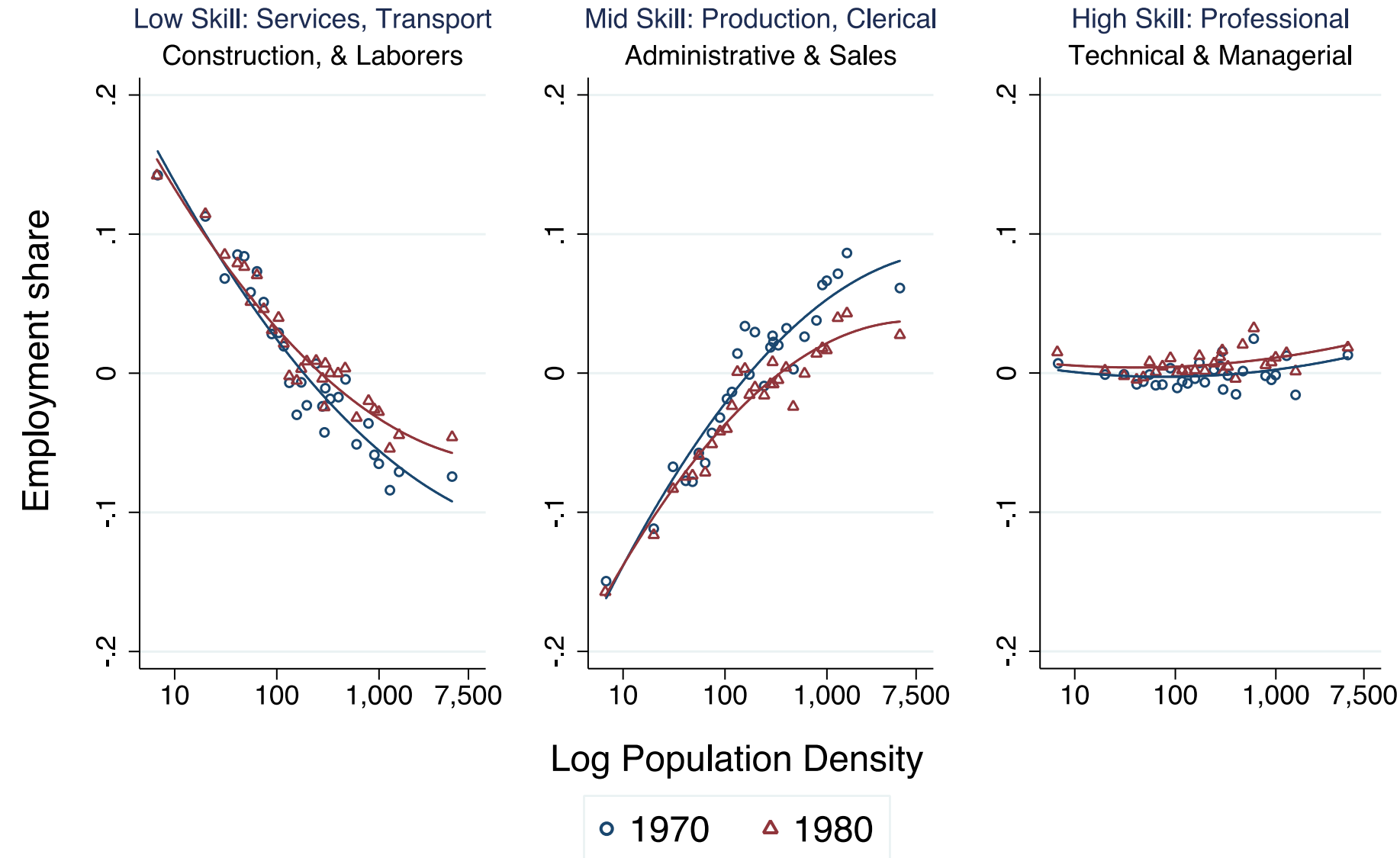
Occupation Shares among Non-College Adults: High School or Below
(Level Relative to 1970 Mean)



Non-College
Workers
1970

Mid-Skill Work Steeply Rising
in Population Density, Low-Skill Work Steeply Declining

Occupation Shares among Non-College Adults: High School or Below (Level Relative to 1970 Mean)



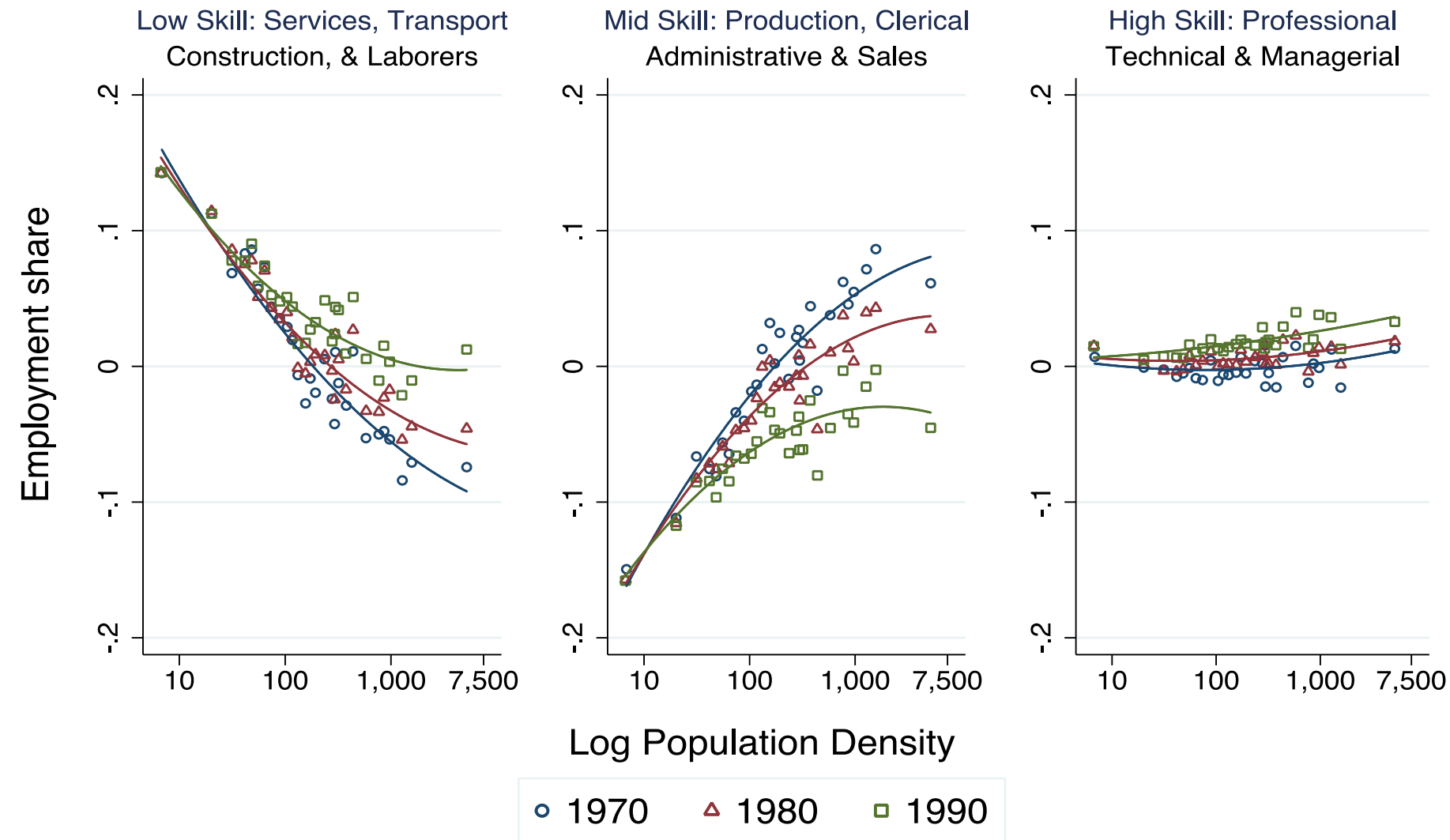
Non-College Workers

1970 + 1980

Flattening Gradients

- Becomes **less positive** in mid-skill work
- Becomes **less negative** in low-skill work

Occupation Shares among Non-College Adults: High School or Below (Level Relative to 1970 Mean)

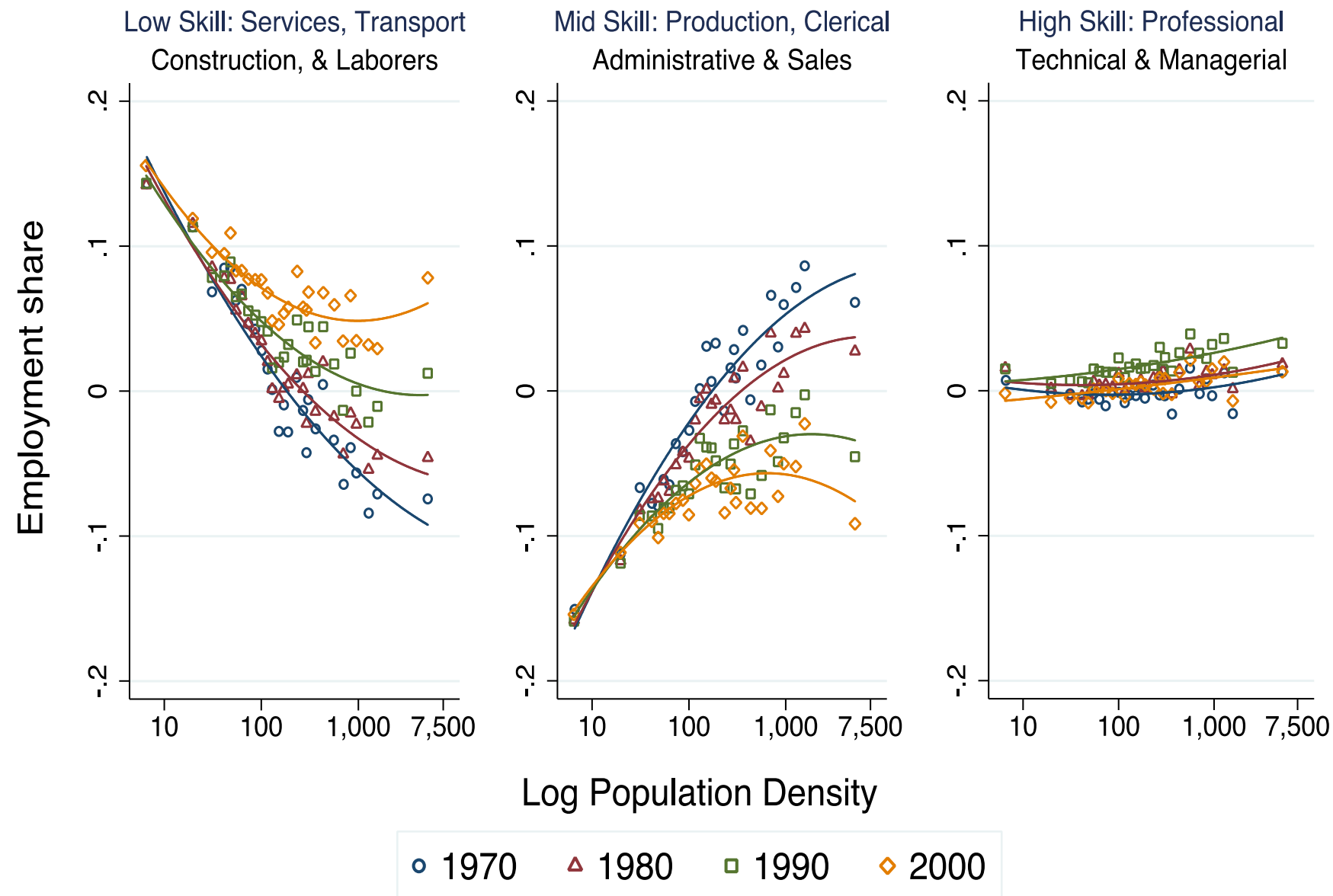


Non-College
Workers
1970 +
1980 + 1990

Flattening Gradients

- Becomes **less positive** in mid-skill work
- Becomes **less negative** in low-skill work

Occupation Shares among Non-College Adults: High School or Below (Level Relative to 1970 Mean)

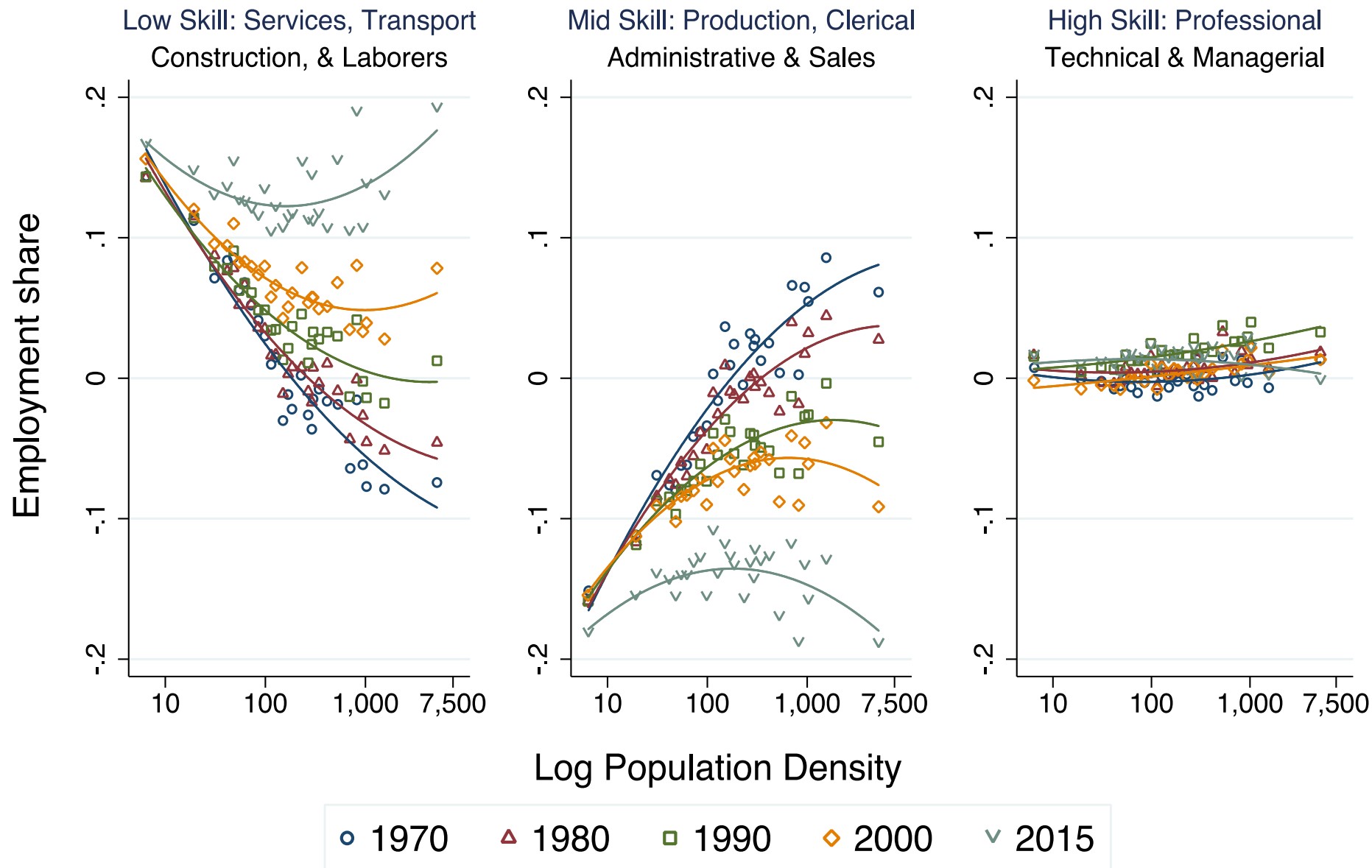


Non-College
Workers
1970 +
1980 + 1990
+ 2000

Flattening Gradients

- Becomes **less positive** in mid-skill work
- Becomes **less negative** in low-skill work

Occupation Shares among Non-College Adults: High School or Below (Level Relative to 1970 Mean)



Non-College
Workers
1970 +
1980 + 1990
+ 2000 + 2015

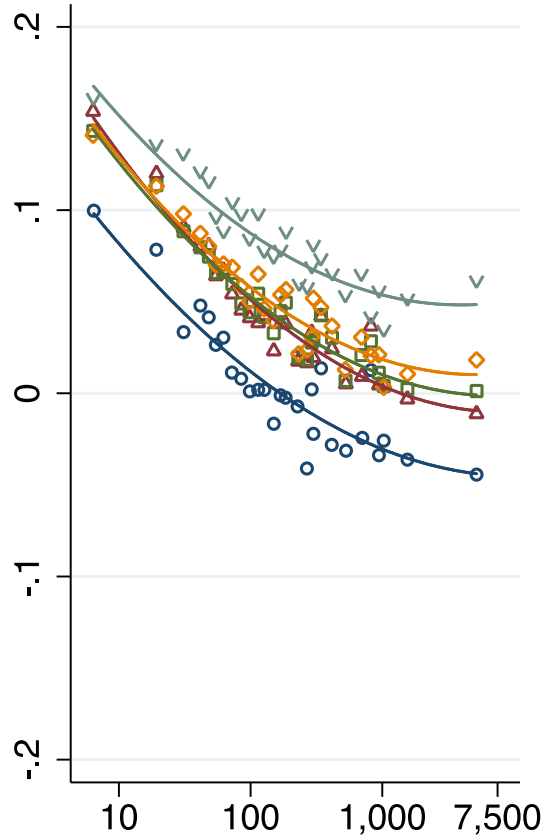
No Occupational Skill Gradient
Remaining!

Mid-skill work
as scarce in cities as rural
areas

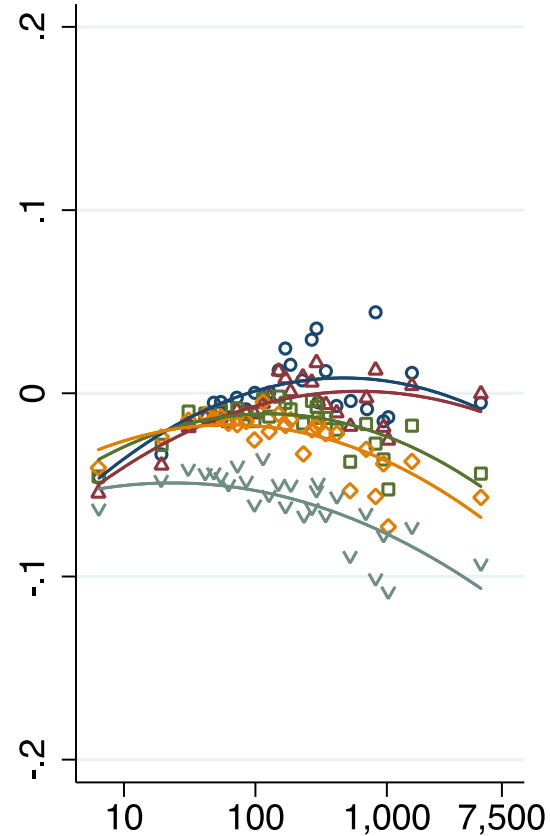
Low-skill work
as prevalent

Occupation Shares among College Adults: Some-College or Above (Level Relative to 1970 Mean)

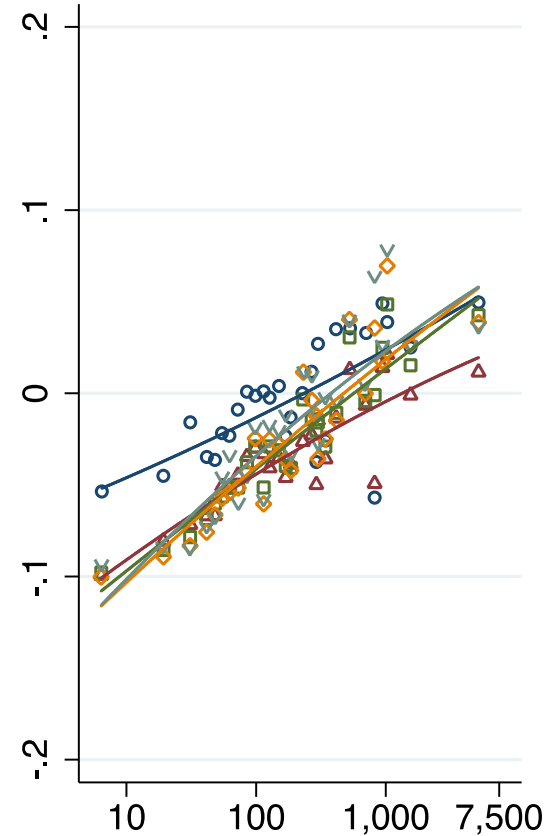
Low Skill: Services, Transport
Construction, & Laborers



Mid Skill: Production, Clerical
Administrative & Sales



High Skill: Professional
Technical & Managerial



Log Population Density

○ 1970 △ 1980 □ 1990 ◇ 2000 ▼ 2015

College Workers

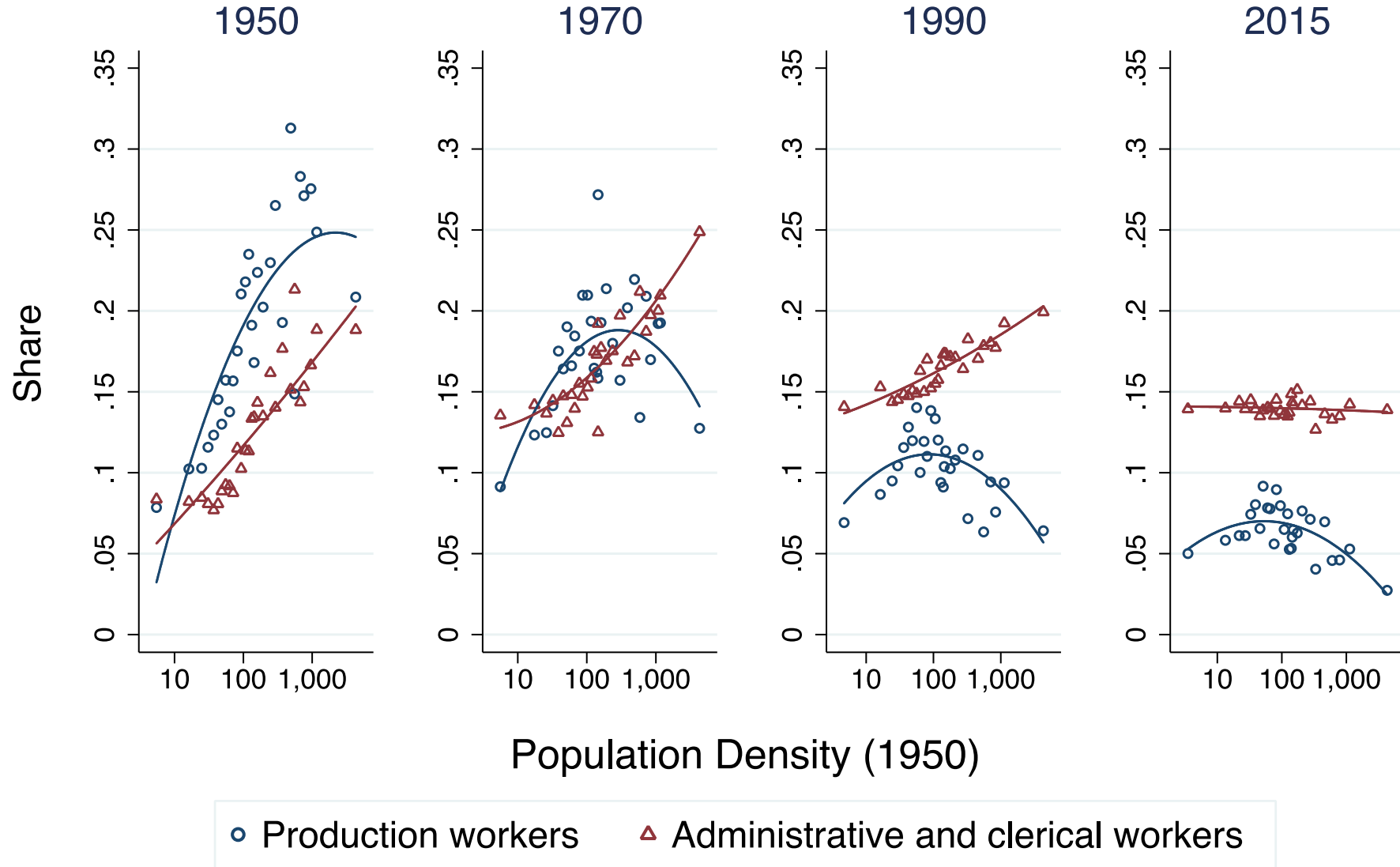
1970 +

1980 + 1990

+ 2000 + 2015

Little change in occupational
distribution of college-
educated workers

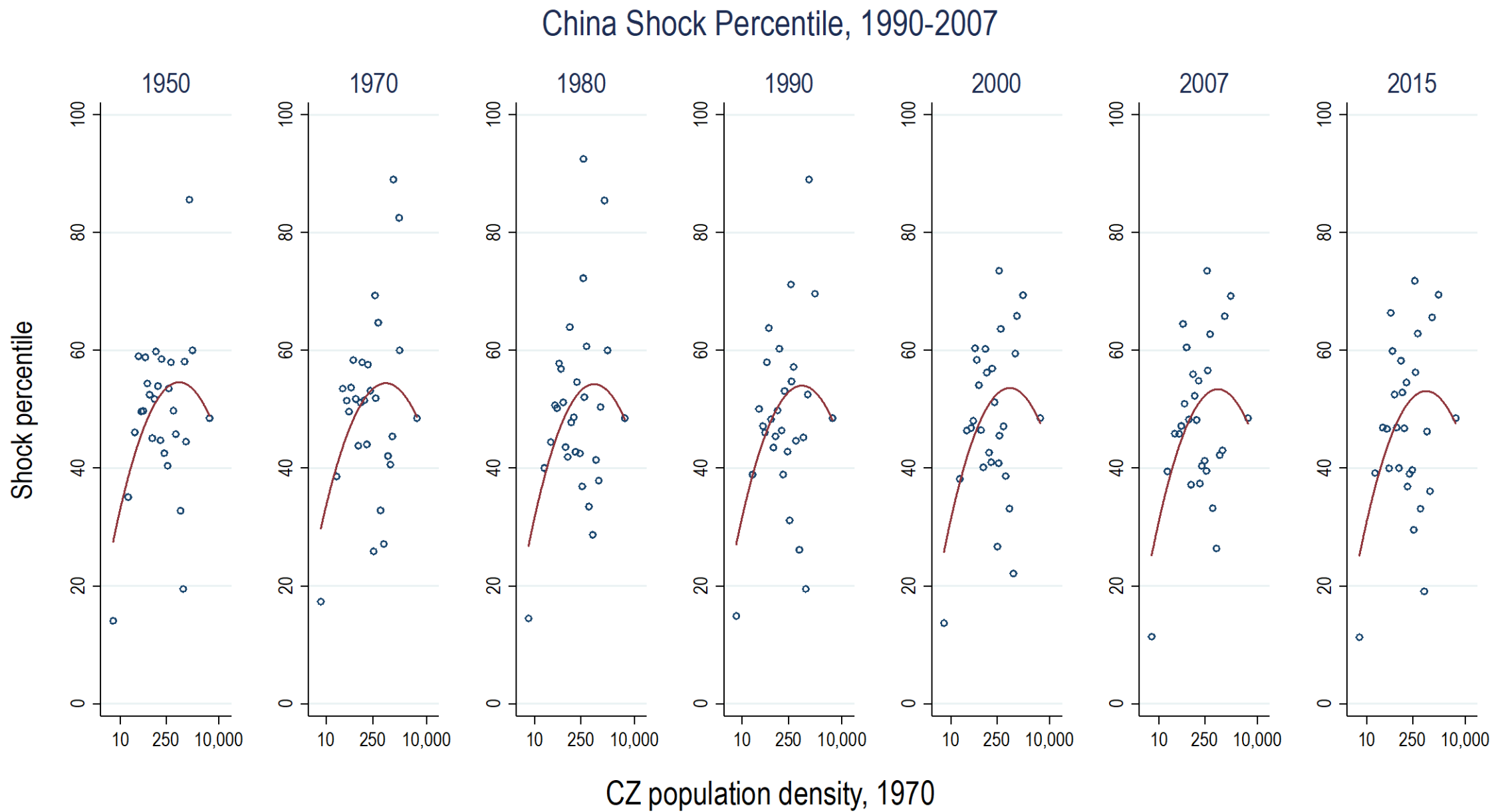
Production and Administrative and Clerical Employment Working Age Adults



Where Did the
Middle Skill Urban
Jobs Go?

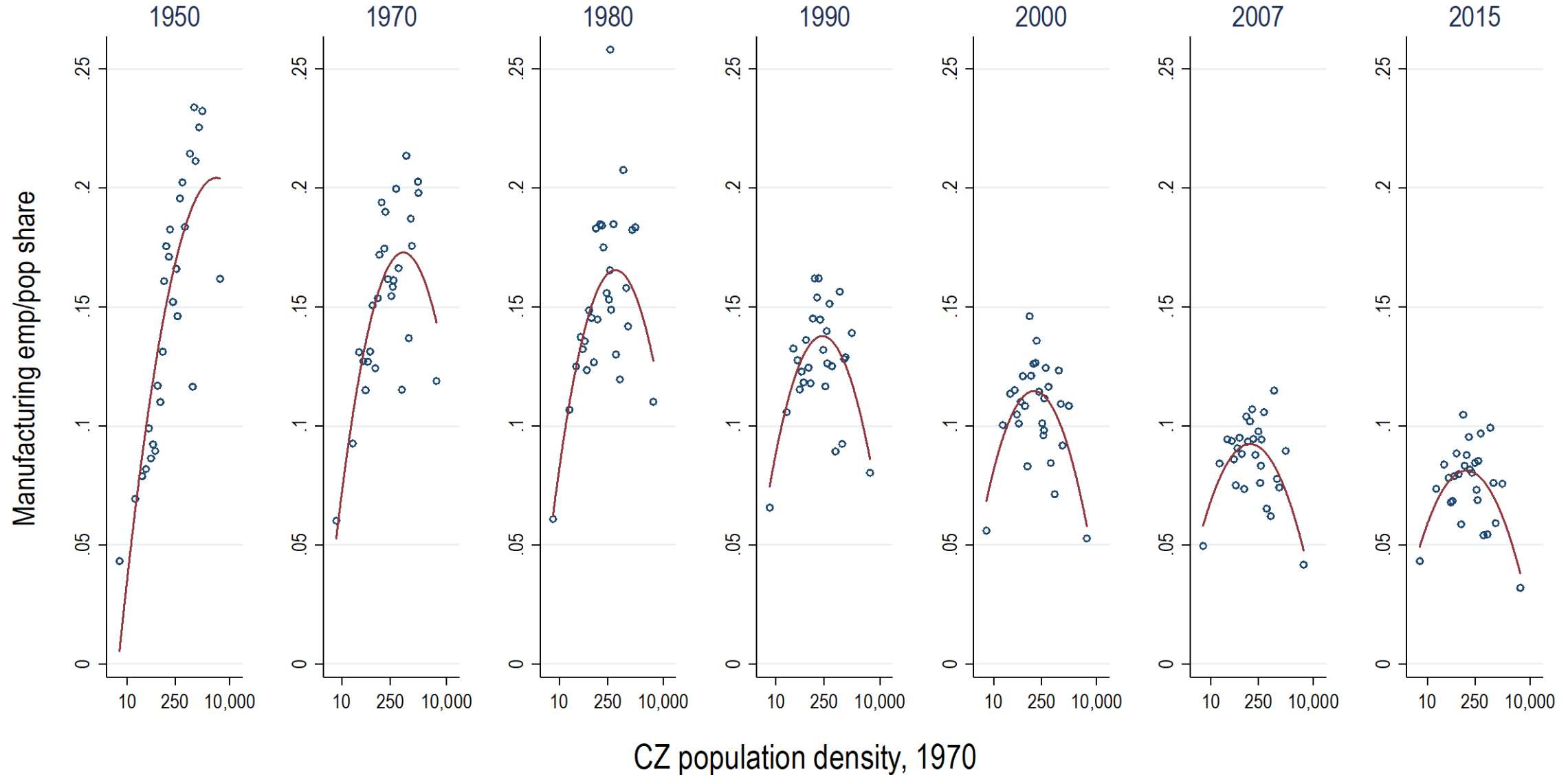
Decline of Production Jobs
(majority male)
and Administrative / Clerical
Jobs (majority female)

Population Density by Decade vs. China Shock, 1990-2007



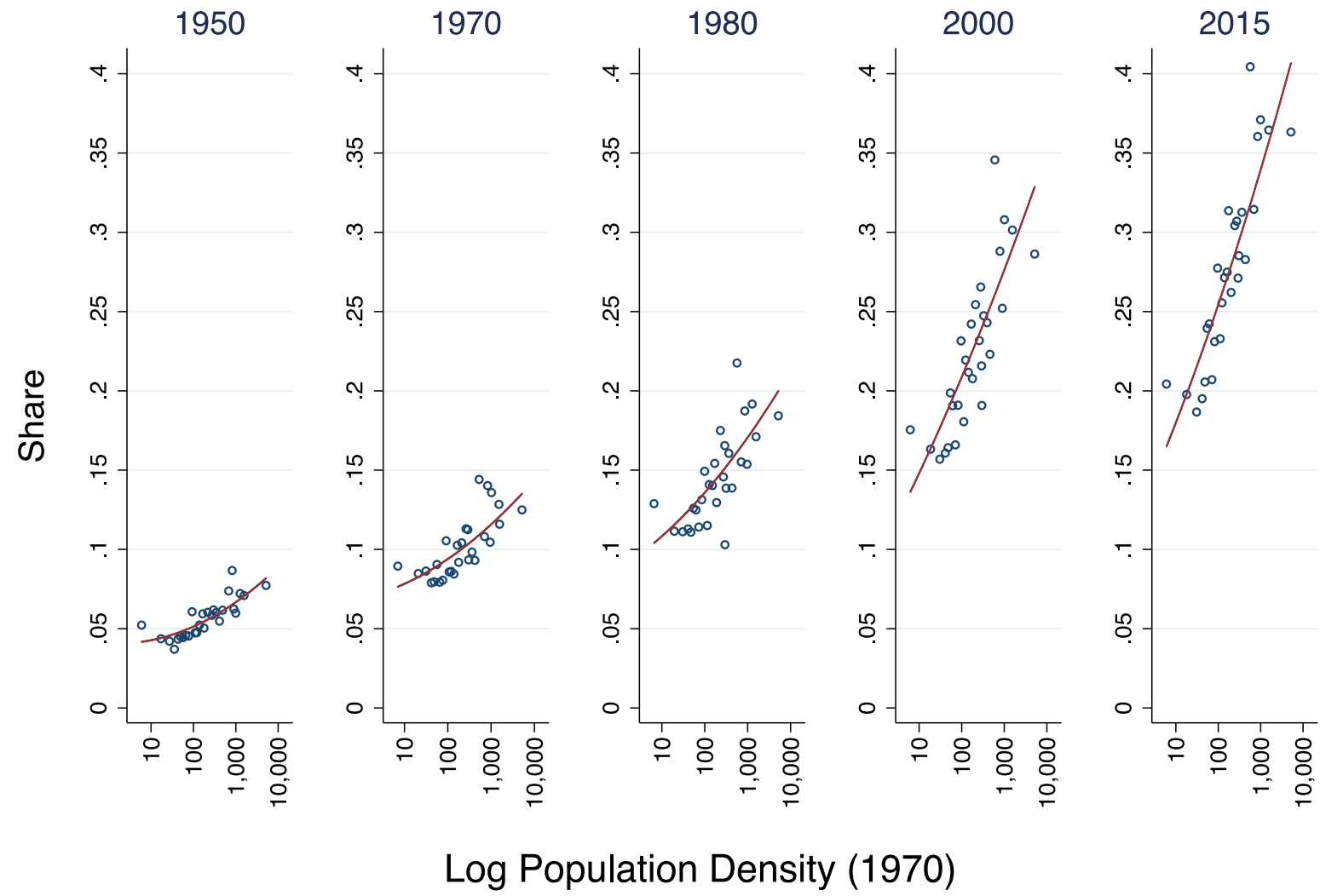
Population Density and Manufacturing Emp/Pop, 1950 – 2015

Manufacturing Employment to Population, 1970-2015



Population Density and Educational Attainment

College Educated Share of Working-Age Population



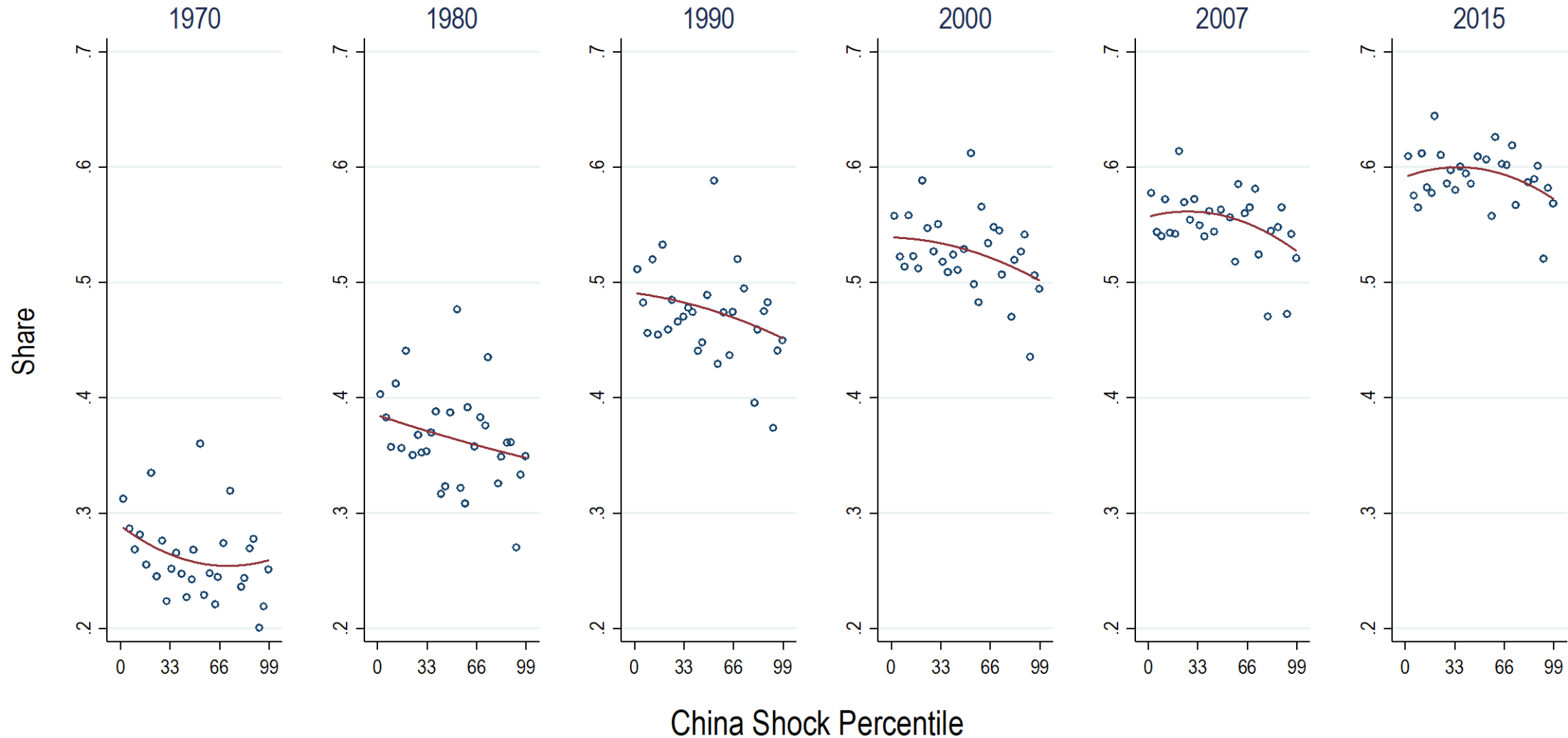
Urban Areas Have Become Much More Educated Since 1980

Urban-Rural College Degree Gap

- 1950:** 5 pct points
- 1970:** 5 pct points
- 1980:** 8 pct points
- 1990:** 13 pct points
- 2000:** 17 pct points
- 2015:** 20 pct points

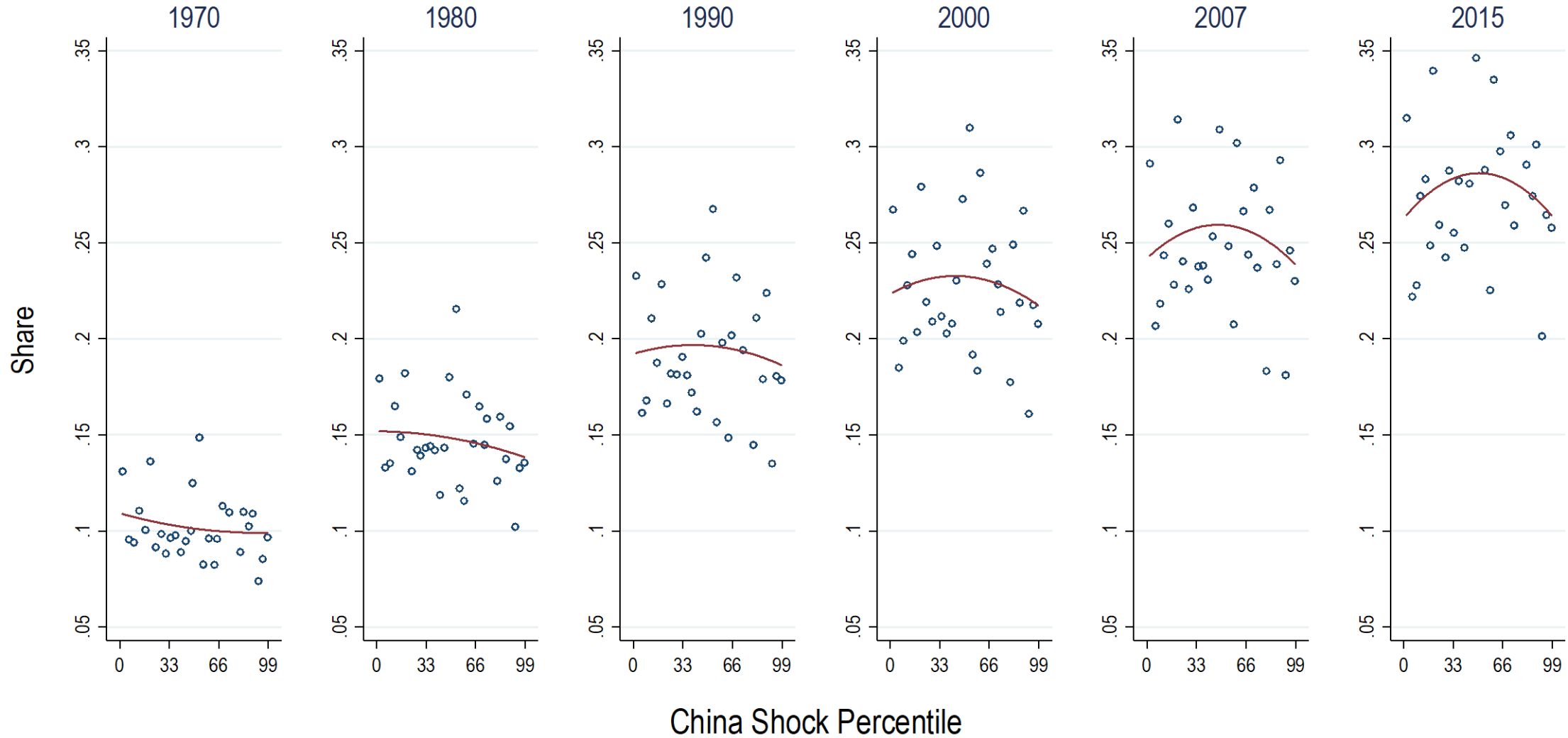
College Share of Adults in China-Shocked CZs, 1970 –2015

College Share of Adults
vs. China Shock Exposure 1990-2007



Four-Year College Share of Adults in China-Shocked CZs, 1970 –2015

Four-Year College Share of Adults
vs. China Shock Exposure 1990-2007



Summary: Shocks, Persistence, and Place

1. The puzzle

- Regional convergence slowing or halted after 1970s
- Unemployment rates became persistent across local labor markets

2. China Shock had durable adverse effects on exposed CZs

- Sharp falls in earnings, especially among men
- Decline in marriage rates, rise in poverty, rise in single-headed HH's
- Rise in young adult mortality

3. Was something special about the 'China Shock'—or is something special about the shocked places?

- Shocked places experienced *positive pre-China shock* 70s & 80s
- But this *had to be* ephemeral: education tides running against them

4. Where is the land of opportunity for non-college adults?

Thank you