The Effects of Exposure to a Large-Scale Recession on Higher Education and Early Labor Market Outcomes

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Introduction

Motivation
- Recessions could either increase or decrease an individual’s human capital attainment.
- Overall effects and dominant mechanisms could differ by age at the time of the recession.

What we do
- Study the effect of timing of exposure to a large-scale recession on educational attainment and early labor market outcomes
- Exploit variation in age at exposure and regional labor market shocks from the 1997–98 Asian financial crisis in South Korea

Contributions
- Examine age-differential effects using 20+ birth cohorts
- Examine education and labor market outcomes in a unified setting
- Provide evidence on various dimensions to explore behavioral responses and possible mechanisms

Background & Data

1997–98 Asian financial crisis (AFC) in South Korea
- A sharp and deep economic downturn starting in 1997
- The worst recession since the 1950–53 Korean War
- Regional variation in recession severity (increase in regional unemployment rate during 1997–99, ΔUR97–99) due to disparities in industrial structure, concentration of SMEs, and temporary workers

Data and sample
1. Census
- Quinquennial survey collecting info on population, households, and housing characteristics
- Sample: birth cohorts 1968–1996 from 2020 Census 2% sample (N = 369,816)
2. Youth Panel (YP) 2001 & 2007
- Yearly longitudinal data on a representative sample of youths in South Korea
- Sample: birth cohorts 1972–1996 (N = 13,878)

Empirical Strategy: Extended DID

\[ y_i = \sum_{c \in C} \beta_c AFC_c \times 1[\text{Age in 1997} = c] + \lambda \gamma_c + \lambda_r + \lambda_c + \epsilon_i \]

- \( y_i \): outcome of person \( i \) (who was \( c \) years old in 1997 and born in region \( r \))
- \( AFC_c \equiv \Delta UR97–99 \): recession severity in region \( r \)
- \( X_i \): person \( i \)’s predetermined characteristics
- \( \lambda_c \): cohort fixed effects
- \( \lambda_r \): region fixed effects
- \( \beta_c \): effect of \( AFC_c \) on individuals age \( c \) in 1997 relative to the reference group
  - Census sample: 29-year-olds in 1997 (1968 birth cohort)
- If \( \beta_c < 0 \), any (-) estimated effects are lower bound estimates

Source of identification: variation in recession severity within cohorts across regions

Identifying assumption: parallel cohort trends across regions without the recession induced by the AFC

Magnitude of the estimates (relative to \( \beta \); \( \Delta UR97–99 \) ↑ by 1 SD leads to:
<table>
<thead>
<tr>
<th></th>
<th>Humanities</th>
<th>Social sci.</th>
<th>STEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>AFC × 1[Age in 1997 = 1–12]</td>
<td>-0.101*</td>
<td>-0.025</td>
<td>0.062</td>
</tr>
<tr>
<td>AFC × 1[Age in 1997 = 13–24]</td>
<td>-0.075*</td>
<td>-0.010</td>
<td>0.050</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.012</td>
<td>0.010</td>
<td>0.106</td>
</tr>
</tbody>
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Possible Mechanisms

Negative recession effect
- Household credit constraints (rejected)
- No heterogeneous effect by parental education
- No reduction in parental monetary investment (e.g. private out-of-school education spending)

2. Non-monetary factors: family instability
- A slight increase in parental divorce due to AFC
- Across regions, corr(AFC shocks, Δdivorce rate due to financial reasons) > 0

3. Decline in community-level inputs: quality of neighborhoods or schools
- Across regions, corr(AFC shocks, Δgovernment spending per capita on K–12 education) < 0

Age-differential effect
- Lack of labor market substitution effect for individuals not old enough to work
- Younger ages may be critical periods in human capital development
- Differences in the duration of exposure to aftereffects of AFC

Summary

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