STATE-OWNED ENTERPRISES REFORM, EMPLOYMENT AND TERTIARY EDUCATION IN URBAN CHINA
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Human Capital Response to Changes in Returns to Education

Although theoretically clear, empirical examination of whether and how individuals respond to changes in the returns to education is difficult (examples include Cascio and Narayan (2015) Black, McNicholl, and Sanders (2005)), due to hard-to-find exogenous variations in the cost and/or the benefit of education.

This paper studies Chinese tertiary educational attainment responding to changes in the employment probability gap across the college experienced and people who were not:

Employed College = α + β1College + β2Intensity + β3Post + β4College × Post + + αCollege × Post + ϵ

Employed Post: whether individual i of cohort c in city j was employed at t.

Post = 1[t]; whether an observation is from 2000 (1990), after (before) the reform.

Sample: older than 25, not currently in school.

3 Effect on Tertiary Educational Attainment
Cohort (c) and city (j) jointly determine an individual’s exposure to the SOE reform. Cohort is now the time dimension.

College Education Regression (Difference-in-Differences):

College College = β3c + β4jIntensity + β5Post + β6Intensity × Post

College × Post: whether individual i of cohort c in city j had any college experience.

Post: if cohort c turned 18 after SOE reform.

Sample: Adults who made college decisions after the SOE reform.

1 Measure of SOE Reform Intensity

Instead of taking local SOE employment change as exogenous (Jenq et al. (2015)), a shift-share measure of SOE reform intensity is constructed at the city level to reconcile concerns with confounding factors such as local skill-specified labor demand shocks:

Intensity = Σ j Intensity = Σ j, k j,k,2000 × j,k,2000

• j,k,2000: Initial share of employment for 2-digit industry k in city j;

• k: SOE negative national growth of SOE employment for industry k between 1990 and 2000.


Variables (1) (2)
Intensity × Post 0.035*** 0.033***
(0.007) (0.007)
Post 0.107*** 0.141***
(0.019) (0.034)
Observations 181,356 181,109
Intensity × Post 0.006 0.004
(0.004) (0.004)
Post 0.103*** 0.106***
(0.007) (0.007)
Observations 105,842 105,595

College Supply Ctrls No Yes
City and Cohort FE Yes Yes

Empirical Strategies

Channel: Employment probability gap across skill groups increases → returns to tertiary education increases → tertiary educational attainment increases.

This paper separately examines: (i) whether the SOE reform differentially impacted employment across skill groups; and (ii) whether in more intensely reformed cities, the increase in college attendance increased.

2 Employment Effects by Skill Group

A Triple-Differences model is fitted to see if the SOE reform increased the gap in employment probability across the college experienced and people who were not:

Employed College = α + β1College + β2Intensity + β3Post + + αCollege × Post + ϵ

Employed Post: whether individual i of cohort c in city j was employed at t.

Post = 1[t]; whether an observation is from 2000 (1990), after (before) the reform.

Sample: older than 25, not currently in school.

The Effects of the SOE Reform on College Educational Attainment

The main estimates are robust to:

• Restricting to people who had never moved to mitigate concerns for misidentifying one’s location of college choice;

• Restricting to SOE employment in the calculation of initial industry employment shares, at the province level;

• Lineardely dependence with pre-reform city-level data;

• Changing sample to young adults from the 1990 and 2000 Census surveys.

References


Data

The measure of SOE reform intensity:

• Initial industry shares: 1990 National Population Census;

• National employment growth: China Labour Statistical Survey.

Regressions:

• Employment effects: Adults (19-35) in 2005 mini-census (0.2% of the population).

Results

The Effects of the SOE Reform on Employment Gap between Education Groups, 1990-2000

<table>
<thead>
<tr>
<th>Skill Groups</th>
<th>Same College</th>
<th>College Degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Split by:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intensity + College × Post</td>
<td>0.019***</td>
<td>0.018***</td>
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<tr>
<td>(0.005)</td>
<td>(0.005)</td>
<td></td>
</tr>
<tr>
<td>College × Post</td>
<td>0.180***</td>
<td>0.177***</td>
</tr>
<tr>
<td>(0.004)</td>
<td>(0.004)</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td>0.077***</td>
<td>0.077***</td>
</tr>
<tr>
<td>(0.004)</td>
<td>(0.004)</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>2,699,030</td>
<td>2,699,030</td>
</tr>
<tr>
<td>City and Cohort FE</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Fig 1: Trends of College Attendance across Low- and High-Intensity Cities

State-owned Enterprises Reform 1997

SOEs are publicly-owned firms controlled by the state in urban China:

Before: Production quota and central price setting, life-long employment, social safety nets, no wage incentive scheme.

After: Responsible for their own profit/loss and human resources, self-set pricing, little employment guarantee and less worker’s benefits.

The SOE reform closed and transformed worse-performing SOEs, booming la

of SOE reform intensity. Neither shows diverging trends in tertiary educational attainment across cities with high- and low- intensity.