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SHADOWS OF THE FIRST JOB: THE LONG-TERM EFFECTS OF ECONOMIC CONDITIONS AT GRADUATION IN CHINA

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Abstract

This study examines the long-term effects of graduating during weak economic conditions on the careers of Chinese university graduates. Using panel data from the China Family Panel Studies and national unemployment statistics from 2010 to 2020, I estimate baseline and fixed effect regression models to measure the impact of the unemployment rate at graduation on income and employment. Results show that a 1% increase in the graduation-year unemployment rate reduced employment probability by 0.05% points and lowered the annual income by roughly ¥460 ($64), with effects persisting even after controlling for time shocks. The findings highlight the need for support targeting graduates during economic downturns.

Keywords

Recession, College Graduate, Employment, Income

1. Introduction

In recent years, China has faced growing concerns over youth unemployment, especially among university graduates. In early 2025, the average urban surveyed unemployment rate reached 5.2% and youth joblessness hit 14.5% for those aged 16-24, far higher than the 4.1% national registered unemployment rate in 2015 (National Bureau of Statistics, 2025). The job market has become increasingly competitive, and many young people are struggling to find stable, well-paying jobs after graduation. Moreover, experiencing unemployment at the start of one's career can lead to a persistent effect—lower earnings and diminished opportunities that endure long after the initial job loss. These challenges raise an important question: does graduating during a bad economy have a long-term impact on one's career?

This study investigates how the unemployment rate at the time of graduation affects the long-run career outcomes of Chinese university graduates. Using individual-level data from the China Family Panel Studies (CFPS) covering the period from 2010 to 2020, I estimate both baseline and fixed effects regression models to quantify the relationship between macroeconomic conditions at graduation and two key career outcomes: annual income and employment status.

Previous research shows that graduating during a recession can have lasting consequences, especially when it comes to earnings. For example, Kahn (2010) finds that a 1% increase in the unemployment rate at graduation in the US leads to a 6 to7% drop in starting wages. These effects are well-documented in places like the U.S., where starting a career in a weak economy can have long-lasting negative impacts on income and job opportunities. A similar effect is documented in other developed countries. In Canada, Oreopoulos, von Wachter, and Heisz (2012) finds that graduating during a recession leads to persistent earnings losses, with a 5-percentage-point rise in unemployment causing an initial 9% wage drop. Furthermore, Fernández-Kranz and Rodríguez-Planas (2018) find that Spanish graduates who enter the job market during a downturn earn about 6.4% less over the next ten years. Most of this income gap fades after around seven years. All these studies demonstrate how graduating in downturns creates durable career disadvantages, particularly for less skilled workers. But we still don't know much about whether the same holds in China. This project aims to close that gap by using nationally representative panel data to explore how Chinese college graduates' income and employment are shaped by the economic conditions they face at graduation.

2. Methodology

To explore the long-term impact of macroeconomic conditions—specifically the unemployment rate at graduation—on the career trajectories of Chinese university graduates, we perform two sets of regression analyses.

I start by estimating a baseline regression model as follows:

$$Y_{itg} = \beta_0 + \beta_1 * X_{ig} + \epsilon_{itg} \quad (1)$$

Y_{itg} represents either annual income or employment status (binary) for individual i in survey year t who graduated in year g. X_{ig} is the unemployment rate in the year of graduation g for individual i. Our sample includes individuals with an undergraduate degree or higher. β1 captures the association between macroeconomic conditions at graduation and career outcomes.

Since the data of this study are from a more than ten-year period, the macroeconomic conditions experienced substantial change over the analysis period. To account for unobserved time-specific shocks, I extend the baseline model to a fixed effect model:

$$Y_{itg} = \beta_0 + \beta_1 * X_{ig} + \mu_t + \epsilon_{it} \quad (2)$$

Y_{itg} represents either annual income or employment status (binary) for individual *i* in survey year t who graduated in year g. X_{ig} is the unemployment rate in the year of graduation g for individual i. μ_t is a series of binary variables indicating each survey year, which control for nationwide macro shocks such as inflation and unemployment rate.

3. Data

To examine the long-term effects of macroeconomic conditions on the career development of university graduates in China, I used data from the China Family Panel Studies (CFPS) from 2010 to 2020, which covers 25 provinces and over 16,000 households, collecting detailed information on education, employment, income, and family background. The unemployment rate data is obtained from national statistical yearbooks, covering the years 2010 to 2020, and matched to each graduate's estimated year of graduation to represent the macroeconomic conditions they faced when entering the labor market.

To better understand the characteristics of the sample, I calculate the summary statistics of the key outcome variables, including annual income and employment status. The analysis sample includes 13,839 individuals with at least a college degree. The average annual income is ¥96,814 ($13,478) with a standard deviation of 246,949. The range of annual income spans from ¥0 to over ¥10 million, suggesting a significant variation and the presence of outliers. To measure employment, I created a binary variable indicating whether a person reported holding a job. On average, about 63% of the sample were employed at the time of the survey, with a standard deviation of 0.48.

4. Results

I used a regression approach to quantify how the unemployment rate at graduation shapes long-term career outcomes. In the baseline regression models (Table 1, Columns (1) and (3)), a 1% increase in the unemployment rate at graduation is associated with a 0.052 percentage point drop in employment probability and a ¥459.71 ($64.14) decrease in annual income. The effect is equivalent to a 0.1% reduction in employment and a 0.5% reduction in income.

When including year fixed effects to capture economy-wide shocks (Table 1, Columns (2) and (4)), the effects remain statistically significant but attenuate: each 1% rise in the unemployment rate now lowers employment by 0.04 percentage points and reduces income by ¥170.28 ($23.71). Including the year fixed effects improves the overall fit of the model, with R^2 rising from 0.0135 to 0.1035 for employment as the outcome and from 0.0248 to 0.2433 for income.

These results suggest that while adverse macro conditions at labor-market entry continue to depress early earnings and job chances, the magnitude of their long-run impact is partly absorbed by broader time-period factors captured by year fixed effects.

Table 1. The Effect of Unemployment Rate at Graduation on Employment and Income.

	-1 Employment	-2 Employment	-3 Income	-4 Income
Unemployment Rate	-0.052***	-0.041***	-45,971.72***	-17,028.25***
	-0.003	-0.003	-2,457.63	-2,276.61
Fixed Effect	N	Y	N	Y
R squared	0.0135	0.1031	0.0248	0.2433
N	13,839	13,839	13,761	13,761

Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

In Table 2, I examine the heterogeneous effect of unemployment rate at graduation based on how long people have graduated. Columns (1) and (2) include those who graduated more than five years ago, and columns (3) and (4) include those who graduated within 5 years. Overall, a higher unemployment rate at the year of graduation is associated with a lower employment rate and lower annual income for both groups. However, the magnitude of the effect is much smaller for those who graduated more than five years ago, and the effect on income is statistically insignificant. The results suggest that the negative impact of the economic condition at the time of graduation attenuates over time.

Table 2. The Heterogeneous Effect of Unemployment Rate at Graduation on Employment and Income.

	-1 Employment	-2	-3 Income	-4
	Graduate>5 years	Graduate<=5 years	Graduate>5 years	Graduate<=5 years
Unemployment Rate	-0.015***	-0.231***	-3,367.62	-4,3475.9**
	-0.004	-0.039	-2,987.50	-14,726.78
Fixed Effect	Y	Y	Y	Y
R squared	0.0062	0.191	0.2603	0.2019
N	9,516	4,323	9,194	4,567

Note: Standard errors are in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

5. Conclusion

This paper examines how macroeconomic conditions at graduation affect the long-term career outcomes of Chinese university graduates. Using nationally representative data and regression analysis, I find that higher unemployment rates at graduation lead to persistent reductions in both income and employment.

These findings suggest that when the economy is weak, the government and universities should give more help to new graduates, such as offering more job fairs, internship opportunities, and short-term financial support. Such measures could make it easier for young people to find their first job and reduce the risk of long-term career setbacks

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