

The casual effect of childhood left-behind experience in China on future labour market outcome

by
Hongzhou Huang *

at the
University of Wisconsin-Madison
December 2022

*hhuang434@wisc.edu

Abstract

This paper examines the causal relationship between childhood left-behind experiences, resulting from the labor migration of one or both parents, and labor market outcomes in China. To address the endogeneity issue, I construct an instrumental variable based on China’s Hukou system. I then estimate the causal effects of the absence of fathers and mothers during childhood on the probability of employment and annual wages, respectively.

1 Introduction

China has witnessed a significant rural-to-urban migration since the economic reforms of the late 1970s, as millions of migrants seek better employment opportunities and living conditions in major cities. This migration trend has led to a growing phenomenon where the children of these migrants are often left behind in their places of origin due to financial and institutional barriers. Extensive research has already highlighted the potential impact of parental migration on the school performance, cognitive abilities in early childhood, as well as the physical and mental health of these left-behind children. However, only a limited number of studies have addressed the long-term consequences of such experiences in adulthood.

Considering that the next generation is expected to become the primary workforce in China within a few decades, it is crucial to acknowledge that the lasting effects of exclusion and marginalization during early childhood will shape the future labor market structure. Some studies, including Liu, Zheng, Parker, and Fang (2020), have examined the relationships between parental migration during childhood and the educational achievements and wages of young migrants.

2 Identification

In particular, Wang, H., Cheng, Z., Zhe Wang, B., and Chen, Y. (2021), investigated the causal impact of childhood left-behind experiences on labor market outcomes, utilizing the historic migration rate as an instrumental variable. In this paper, I propose an alternative instrumental variable to measure the causal effect of being left-behind on labor market outcomes, employing the Hukou registration index mentioned in J. Zhang, R. Wang, and C. Lu (2018). The rationale behind this choice is that parents who meet the Hukou qualification requirements are more likely to bring their children along when migrating to cities. On the other hand, migrants who fail to meet the Hukou qualification requirements, while still being able to work in urban areas, are more inclined to leave their children behind. This is due to the fact that under the Hukou system, migrants’ children are classified as rural residents and are consequently denied access to educational and welfare services in cities. Moreover, these parents face

higher educational fees for their children (Liang and Chen, 2007; Fleisher and Yang, 2003).

The utilization of these instrumental variables is justified by the fact that the Hukou registration system, which was implemented in 2000, can only influence the future labor market outcomes of left-behind children through their parents' decision to migrate with or without them.

3 Data

The data used in this study were drawn from the 2012 China Family Panel Studies (CFPS), a nationally representative biennial longitudinal survey conducted by the Institute of Social Science Survey (ISSS) at Peking University. The variables of interest are the probability of being employed and the annual wage of individuals. Following the existing literature (Wang, H., Cheng, Z., Zhe Wang, B., Chen, Y. 2021), the age of the respondents is restricted to 30 or older to avoid the influence of significant Chinese historical events. The left-behind experience of an individual is defined by a set of dummy variables equal to one if their father, their mother, or both parents had lived away from them for six months or more. Individuals were asked about their left-behind experience when they were 0–3 and 4–12 years old, respectively. Therefore, there are a total of 8 dummy variables to identify respondents' left-behind experience by their mother, father, either, or both at age ranges from 0 to 3 and 4 to 12.

Table 1: Probability of Employment with or without left-behind experience

LBE Father 0-3	LBE Mother 0-3	LBE Father 4-12	LBE Mother 4-12	Probability of Employment
0.00	0.00	0.00	0.00	0.52
0.00	0.00	0.00	1.00	0.42
0.00	0.00	1.00	0.00	0.49
0.00	0.00	1.00	1.00	0.43
0.00	1.00	0.00	0.00	0.86
0.00	1.00	0.00	1.00	0.50
0.00	1.00	1.00	0.00	0.40
0.00	1.00	1.00	1.00	0.31
1.00	0.00	0.00	0.00	0.50
1.00	0.00	0.00	1.00	0.75
1.00	0.00	1.00	0.00	0.54
1.00	0.00	1.00	1.00	0.58
1.00	1.00	0.00	0.00	0.52
1.00	1.00	0.00	1.00	0.50
1.00	1.00	1.00	0.00	0.62
1.00	1.00	1.00	1.00	0.48

Table 1 has shown the summary on employment probability for individuals with and without a left-behind experience in childhood.

4 Method

As suggested by previous studies, there might be unobserved heterogeneity affecting both parental migration decision, which in this paper is considered to be equivalent to having left-behind experience, and children’s labour market outcomes. For example, parental migration depend heavily on children’s school performance, health and mental condition, which are correlated to their future labour market outcome.

To avoid these potential endogeneity problems, I will apply the IV approach. I will be assigning an hukou index to each observation based on the city their parents’ working at. The idea of hukou registration index was mentioned by Zhang J, Wang R, Lu C. 2018, in which they construct a Hukou registration index to measure the stringency of local Hukou qualification in Chinese cities. The requirements to get local Hukou registration vary significantly across locations. In general, the more developed the city is (such as Beijing and Shanghai), the harder to register Hukou in that city, since Hukou holders are entitled to certain public services and usually more developed cities provide better public goods. So the implication of this IV is that parental migration decision could be related to the Hukou registration index, in that with a higher Hukou registration index, parents’ are less likely to bring their children with them, for their children are not entitle to certain benefits of those who has a urban Hukou.

To apply the IV and estimate the long-term impact of left-behind experience on adult labour market outcomes, I estimate the following specification:

$$Y_i = \beta_0 + \beta_1 * LBE_i + \epsilon_i$$

$$LBE_i = \alpha_0 + \alpha_1 * HRI_i + \gamma_i$$

where Y_i denotes one of the labour market outcomes for individual i , including whether an individual is employed or self-employed and, if so, his/her annual wage earnings. LBE_i is a vector of dummy variables indicating whether individual i was left behind by only his/her mother, by only his/her father or by both parents at ages 0–3 and 4–12. HRI_i stands for Hukou requirement Index at different city in China.

In Zhang J, Wang R, Lu C. (2018), the Hukou Index is assessed from various perspectives, including investment (household registration policy), house purchase (buyers of commercial residential units with a floor area exceeding 100 square meters), employment (migrant workers and their families), and talent programs (workers with college degrees who are under 40 years of age, among others). Each of these factors represents the requirements and challenges associated with obtaining residency in a specific city. Individuals in this study are assigned values based on the city where their parents work, and each value will be used as an instrumental variable for the purposes of this paper.

5 Empirical results

After conducting tests for the relevance of the instrument variables, only the Composite and Employment Hukou Indexes were found to be valid instruments. In Table 2 and Table 3, the Employment index and Composite index were used as the Instrumental Variables (IVs) respectively. The results indicate that early-life left-behind experiences with their mothers at ages 0 to 3 have a negative effect on individuals' future wages. This finding is consistent with the results from Wang, H., Cheng, Z., Zhe Wang, B., and Chen, Y. (2021). However, the Kleibergen-Paap rk Wald F statistic suggests that neither the Employment Hukou Index nor the Composite Hukou Index can be used as proper instruments when estimating the probability of employment.

Table 2: IV Employment Index

	<i>Dependent variable:</i>			
	log_wage			
	(1)	(2)	(3)	(4)
LBE_father_0to3	-0.054 (12.008)			
LBE_mather_0to3		-0.013** (39.083)		
LBE_father_4to12			0.356 (7.402)	
LBE_mather_4to12				-0.098 (38.455)
Constant	3.935*** (0.471)	4.350*** (0.514)	3.359*** (0.555)	2.248 (1.479)
Observations	24,897	24,897	24,897	24,897
R ²	-5.593	-11.127	-4.662	-19.087
Adjusted R ²	-5.593	-11.127	-4.662	-19.088
Residual Std. Error (df = 24895)	11.154	15.127	10.337	19.469

Note:

*p<0.1; **p<0.05; ***p<0.01

Table 3: IV Composite Index

	<i>Dependent variable:</i>			
	log_wage			
	(1)	(2)	(3)	(4)
LBE_father_0to3	-0.059 (13.671)			
LBE_mather_0to3		-0.14** (40.704)		
LBE_father_4to12			-0.038 (7.762)	
LBE_mather_4to12				-0.103* (40.135)
Constant	-0.004 (0.536)	-0.004 (0.536)	-0.003 (0.582)	-0.002 (1.543)
Observations	24,897	24,897	24,897	24,897
R ²	-6.811	-12.265	-5.201	-21.045
Adjusted R ²	-6.811	-12.266	-5.201	-21.046
Residual Std. Error (df = 24895)	12.141	15.822	10.817	20.396
<i>Note:</i>		*p<0.1; **p<0.05; ***p<0.01		

6 Endogeneity

The identifying assumption is that the Hukou registration policy, which determines the difficulty of obtaining an urban Hukou, does not influence the future labor market outcomes of left-behind children, except through their parents' decision to migrate with or without them. It is crucial to highlight the potential threats to the validity of the instrumental variable (IV). One such threat is that parents who meet the Hukou qualification requirements may possess higher levels of education or income, which could directly influence their children's labor market outcomes. Unfortunately, the dataset lacks information on parents' education and income, so these factors cannot be used as control variables. Another threat is that the Hukou system has experienced several reforms over the years, both before and after the survey, and the impact of the Hukou registration index on migration patterns may differ across provinces. These policy changes could introduce endogeneity into the instrument if they are correlated with labor market outcomes.

References

- [1] Sylvie Démurger and Hui Xu. Left-behind children and return decisions of rural migrants in china. 2011.
- [2] Jianbo Liu, Xiaodong Zheng, Marie Parker, and Xiangming Fang. Childhood left-behind experience and employment quality of new-generation migrants in china. *Population Research and Policy Review*, 39(4):691–718, 2020.
- [3] David McKenzie and Hillel Rapoport. Can migration reduce educational attainment? evidence from mexico. *Journal of Population Economics*, 24:1331–1358, 2011.
- [4] Haining Wang, Zhiming Cheng, Ben Zhe Wang, and Yuanyuan Chen. Childhood left-behind experience and labour market outcomes in china. *Journal of Business Research*, 132:196–207, 2021.
- [5] Jipeng Zhang, Ru Wang, and Chong Lu. A quantitative analysis of hukou reform in chinese cities: 2000–2016. *Growth and Change*, 50(1):201–221, 2019.
- [6] Xiaodong Zheng, Zuyi Fang, Yajun Wang, and Xiangming Fang. When left-behind children become adults and parents: The long-term human capital consequences of parental absence in china. *China Economic Review*, 74:101821, 2022.

[2] [4] [5] [6] [3] [1]