



Social Inequality in Educational Attainment in China

[Link to publication record in Manchester Research Explorer](#)

Citation for published version (APA):

Li, Y. (2022). Social Inequality in Educational Attainment in China. In Y. Li, & Y. Bian (Eds.), *Social Inequality in China* (pp. 77-106). World Scientific Publishing Europe Ltd.

Published in:

Social Inequality in China

Citing this paper

Please note that where the full-text provided on Manchester Research Explorer is the Author Accepted Manuscript or Proof version this may differ from the final Published version. If citing, it is advised that you check and use the publisher's definitive version.

General rights

Copyright and moral rights for the publications made accessible in the Research Explorer are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Takedown policy

If you believe that this document breaches copyright please refer to the University of Manchester's Takedown Procedures [<http://man.ac.uk/04Y6Bo>] or contact uml.scholarlycommunications@manchester.ac.uk providing relevant details, so we can investigate your claim.



Chapter 4

Social Inequality in Educational Attainment in China

Yaojun Li

Department of Sociology and the Cathie Marsh Institute for Social Research, Manchester University, Manchester, UK

yaojun.li@manchester.ac.uk

Abstract

This study analyses social inequality in education in China, focusing on parental class effects on children's educational attainment. While there is a massive increase in the state provision of educational opportunities, class differences persist and are becoming even more pronounced for the younger cohort. The growing social disparity as found in China is at odds with findings of trendless fluctuation or weakening inequality in the Western societies. It is argued that it is the growing socio-economic disparity in China as compared with the relative stability in class-lined conditions in the Western countries that may account for the different findings between this study and those by other scholars.

Keywords: social class; education; gender; *hukou*; growing inequality

1. Introduction

Education plays a very important role for individuals, families, and for the society. It develops people's human capital by cultivating their cognitive skills, broadening their intellectual horizon, and increasing their productivity (Becker, 1962). It can promote upward social mobility by breaking the link between ascriptive factors, such as family origin, gender, and ethnicity, on the one hand and one's class destination on the other (Hout, 1988; Treiman, 1970). It can also upgrade the occupational structure, create a knowledge-based economy, and promote national prosperity.

In the past few decades, especially since the 1990s, there has been a massive increase in educational provision, particularly at tertiary levels in many countries in the world including China. Yet, whether the greater opportunities reduced social inequality has remained a topic of heated debate. Scholars in the Western countries have conducted systematic analyses on the patterns and trends of class differences in educational attainment but have come to divergent findings. There are also studies on educational inequality in China, but such studies tend to be piecemeal and not easily comparable with the international debate. The present study aims to make a contribution to scholarship in this regard by analyzing social inequality in education in China, with a particular focus on the educational experience of the youngest cohort in order to make a direct comparison with international studies.

This chapter is structured as follows. In the next section, I give a brief account of existing research on the social inequality in education, summarizing the key findings by Western scholars. This is followed by presentation of data, methods, and findings. The analysis ends with a discussion.

2. Existing Research on Social Inequality in Education

"The post-industrial society is, in its logit, a meritocracy," writes Bell, one of the most celebrated American theorists (Bell, 1972: 30). Such a meritocratic society is characterized by an incessant demand for a better-educated and highly qualified workforce, with a growing proportion being situated in professional and managerial positions commanding specialized expertise, and a contraction of the labor force engaged in the extractive

and manufacturing work. With the upgrading of the occupational structure comes a modernization of recruitment processes. Employers begin to adopt more strict and formalized selection procedures on the basis of applicants' formal educational qualifications rather than on their family origins or social networks. In the course of socio-economic development, people also demand greater equality, particularly equal opportunity of education, a demand which no major political party in liberal democracies can ignore. In response to democratic pressures and for the development of national economies, most governments in the developed countries and in some developing countries as well have renovated their national educational policies by delaying school-leaving age, providing free comprehensive education at the lower (and, in some countries, even at the higher) level of secondary education, and promoting tertiary education. For instance, in 1992, many polytechnics were upgraded to university status in Britain, and in 1999, there was a massive expansion of the higher-educational sector in China. The greater educational provision is intended to provide a more skilled workforce and to reduce social inequality in access to education, particularly at the higher levels.

But does greater provision of education lead to greater social equality? Theoretical expectations do not provide a definitive answer. According to the modernization theory, with the "education-based meritocracy," people's class destination will be increasingly determined by the level of educational qualifications they obtain rather than by irrelevant factors such as family origin, gender, or ethnicity. Thus, in the classical origin-education-destination (OED) triangle, the OE and OD links are assumed to weaken as more government subsidies, such as free school meals, are provided to poor children at the compulsory stage of education and with grants, loans, and other forms of support are provided to those in need at the higher levels, whereas the ED link is expected to strengthen as job-relevant skills are provided in schools and universities rather than via family or social networks.

With specific regard to the OE link, there are two main predictions, or what might be called "optimistic" and "pessimistic" theses, as represented by Breen *et al.* (2009, 2010) and by Bukodi and Goldthorpe (2013, 2016, 2019), respectively. The former tends to see a gradual weakening of the origin-education association with the family class gradually losing its impacts on children's educational attainment, whereas the latter tends to see a persisting association in the origin-education association, especially when parental education is viewed in a relative rather than absolute manner.

With regard to the first thesis, Breen *et al.* (2009, 2010) hold that the socio-economic developments in the Western countries since the end of the Second World War provide conditions for the weakening association between family class and educational attainment in both primary and secondary effects in Boudon's (1974) sense. Primary effects refer to children's school performance whereas secondary effects to the educational choices they make, in consultation with their parents, at different transition stages. Breen and colleagues posit that with the economic development and the welfare state, there has been a general improvement in the living conditions of the population, and the progressive taxation system has also narrowed the differences between the middle- and the working-class families in terms of health and nutrition. The reduction in absolute poverty and sibling size of those from working-class families, coupled with widening policies in education, has helped disadvantaged children in narrowing their performance gaps with their middle-class peers. With regard to the secondary effects, that is, choices made at transition points given prior performance, factors such as economic growth, reduction in family size, and increase in state provision of education, would also mean that working-class children do not have to start making money for their family as early as possible, as their counterparts before them had to do in the past. Overall, the socio-economic development and policy changes in educational provision would lead us to expect a weakening of class–education association rather than a persistence of class effects, as shown in earlier studies (Shavit and Blossfeld, 1993). Using 120 datasets spanning a period of nearly three decades (from 1970 to 2004) covering nine European countries, Breen and colleagues (2009) found evidence of a declining association between class and education in their study countries, which they confirmed (2010) after a careful consideration using different methodological innovations. The finding of weakening family effects on children's educational attainment could also be expected from the perspective of the “maximum-maintained inequality” (MMI) thesis proposed by Raftery and Hout (1993): as middle-class children's take-up at lower or even higher levels of secondary education has gradually come to a saturation point, this will allow working-class children to catch up.

In contrast to the declining thesis, Bukodi and Goldthorpe (2013, 2016) have provided rationale and evidence for a thesis of constant origin–education association. This thesis is derived from the “rational action theory” or “relative risk aversion theory” (Breen and Goldthorpe, 1997; Goldthorpe, 2007a, 2007b; see also the “loss aversion theory”

developed by Kahneman, 2011) on the assumption that middle-class parents would tend to use their superior socio-economic-cultural resources to avoid the downward mobility of their children. They would try to provide the best possible education for their children by sending them to fee-paying schools, moving to catchment areas with excellent state schools, paying for extracurricular tuition, and so on. More importantly, at the crucial transition stages, they would exercise “strategies from above” and encourage their children to take more ambitious decisions by applying to prestigious universities/institutions and subject areas even when their prior educational performance may suggest it as over-ambitious. In contrast, working-class families would take “strategies from below” and encourage their children to adopt “realistically feasible actions” by attending local colleges or applying for apprenticeships. Education, the authors hold, can be viewed as a consumption or an investment good. As a consumption good, one’s intellectual and aesthetic pleasure is not adversely affected when more people are consuming it. More frequently, however, in the eyes of parents, children, employers and wider society, education is a positional good, an investment for the advancement in the labor market. In this regard, it is a zero-sum rather than a positive-sum game in which middle-class families are in direct competition with working-class families and they also tend to outmaneuver policy-makers by providing not only greater amounts but also better quality of education at any given level, from preschool to post-graduate education. It is therefore a competition between classes for more and for better education, as elaborated in the “effectively maintained inequality” thesis by Lucas (2001). In their analysis of the educational attainment of the three cohorts in Britain (1946, 1958, 1970), they find the origin–education association weakening when education is measured on an absolute scale but showing a trendless fluctuation if one takes a relative measure. It is this shift from absolute to relative perspective that makes the positions between Breen *et al.* and Bukodi and Goldthorpe complementing rather than necessarily contradicting each other (see also Blanden *et al.*, 2005; Bukodi *et al.*, 2021; Li, 2021, and note 1 for additional evidence).

Turning to the situation in China, it is fair to say that the country has made unprecedented progress in education in the last 70 years. In 1949, when the People’s Republic of China (PRC) was established, only 20% of the school-age children could go to primary school and over 80% of the population was illiterate. Today, it has the largest university student population in the world. The progress was especially noteworthy in the last four decades, since the country adopted the reforms policy in 1978.

The nine-year compulsory education now covers over 94% of the school-age children. The higher educational sector has experienced a massive expansion since 1999. In 1998, the gross enrollment rate at higher educational institutions was 9.8%, with a student body of 2.06 million. Twenty years later, the gross enrollment rate has surpassed 50% (http://news.ifeng.com/a/20160407/48383154_0.shtml), with a student body of over 39 million in 2019 (for a good overview of the changes in the educational sector in China, see Li, 2014, 2018; Li, *et al.*, 2015; Wu and Du, 2018).

Sociologists have paid close attention to the educational development and class differences in educational attainment in China. For instance, Li (2006), using the 2003 China General Social Survey (CGSS), found that middle-class children born after 1992 were around 29% more likely to transit from lower to higher middle schools and 56% more likely to transit from higher middle school to tertiary education than those from routine manual working-class families. Using the 2008 CGSS, Wu (2013a) found that the family-origin effects were unchanged in children's transition from lower- to higher-middle school, and from higher-middle school to university from 1978 to 2008. Using the same data, Wu (2013b) shows that parental status was significantly associated with attendance at "key" schools, which was also positively associated with following the academic rather than vocational track in future education.

Yet, the studies made by Chinese scholars are focused on specific Chinese situation and do not fall easily into international debates. This is mainly due to the scope of data sources used, research questions addressed, and compatibility of origin class employed. The closest we find is that used by Li (2006) but even here, professional fathers were distinguished from managerial fathers as two separate classes without giving any theoretical justification.

Given this, I seek to provide a more systematic analysis than available hitherto using the most authoritative national representative data available at the time of analysis, with both outcome (educational attainment) and independent variables (family class) standardized so that a more direct comparison with the findings by Breen *et al.* (2009, 2010) and Bukodi and Goldthorpe (2013, 2016) can be conducted. The analysis will focus on both changes over time (from 1996 to 2015) and changes across the cohorts, as the expansion of the higher-education sector will have impacted the access to education of those born from 1981, the youngest cohort in the analysis.

3. Data and Methods

To explore the patterns and trends of parental-origin effects on children's educational attainment, I use data from Life History and Social Change (LHSC, 1996) and China General Social Survey series (CGSS, 2005, 2006, 2008, 2010, 2011, 2012, 2013, 2015). These are national representative surveys which cover the longest time span for our analysis of trends of social inequality. While there are some differences in geographical coverage between individual surveys, almost all provinces and municipalities in mainland China are included in the surveys.¹

The outcome variable in this study pertains to the highest level of educational qualifications that our respondents have attained. A five-way variable was constructed similar to that by Breen *et al.* (2009, 2010), ranging from: (1) primary or no formal qualifications, (2) lower secondary, (3) higher secondary or equivalent, (4) sub-degree² to (5) degree or above. This is a rather broad classification which lacks refinement but is an effective one, allowing us not only to have a harmonized coding for the years covered in this analysis but also to compare our findings with those reported in Breen *et al.* (2009).

Our key explanatory variable is parental class. We use the “dominance approach” (Erikson, 1984) and coded the higher of father's or

¹The SCLH and CGSS datasets are available at <https://dataverse.harvard.edu/dataset.xhtml?persistentId=hdl:1902.1/M889V1> and <http://www.cnsda.org/>, respectively. The CGSS is jointly conducted by the Survey Research Centre of the Hong Kong University of Science and Technology and the Sociology Department of the People's University of China. The first CGSS survey was launched in 2003, followed annually or biannually. The 2003 survey is not used in the present study because it considers only the urban sector. The CGSS series covers most provinces, autonomous regions, and municipalities in mainland China with the exception of Qinghai, Tibet, and Ningxia. Qinghai and Ningxia were not covered prior to 2010, and Xizang (Tibet) was only covered in 2010. Nevertheless, this is the best and most comprehensive social survey series available on mainland China. The response rate is 60–75%, as shown in the CGSS Technical Reports.

²It is noted here that having a *Zhong Zhuan* would enable the holder to obtain a technical job in the urban sector in the earlier period, which was of tremendous importance to those from rural origins who wished to attain urban residential status (*hukou*). For urbanites, having this qualification would have no particular advantages relative to those with academic high-school qualifications. Given the small number of rural-origin people with this kind of qualification and given the number of survey years covered, we thought it best not to single it out as a separate category.

mother's class position, when the respondent was at around age 14, with the following five categories: (1) higher-grade professional and managerial workers including large employers (higher salariat); (2) lower-grade professional and managerial workers (lower salariat); (3) an intermediate class of clerical, own-account, manual supervisory and lower technical workers; (4) skilled and semi-skilled manual workers in commerce and industry; (5) agricultural workers or peasants (*nongmin* in Chinese). This schema follows the standard practice in research on social stratification in China (Li and Zhao, 2017; Li *et al.*, 2005; Wu and Treiman, 2007).

China went through some major political events in the past few decades which had significant impacts on people's educational opportunities. To capture this effect, we coded a cohort variable as closely responsive to the political events as we could reasonably construct, with four categories: born before 1947, between 1948 and 1958, between 1959 and 1980, and in 1981 or after that. The first (oldest) cohort turned 19 in 1966, the year in which the Cultural Revolution (1966–1976) started, and received the bulk of their education before the 10-year-long disruption. The next cohort had rather little education as most educational institutions at secondary and tertiary levels were closed during the Cultural Revolution. Around 28 million urban youths were sent to the countryside for “re-education” by the poor and lower-middle peasants as instructed by Chair Mao. Some of them were able to obtain higher education when the universities were re-opened in 1977 after the Cultural Revolution came to an end and the country ushered into a new era. The most dramatic change, insofar as higher education is concerned, occurred when the Chinese Government launched the ambitious program in 1999 to expand the higher-educational sector. This initiative benefited those born after 1980 most. For example, there are now around 3000 universities and higher-learning institutions in China with around 39 million students from undergraduates to post-doctorate researchers, an increase of around 20 times since 1990 (Wu and Du, 2018). The country is not only the second-largest economic powerhouse but also has the biggest university student body in the world.

The SCLH covers respondents aged 20–69 and the CGSS covers respondents aged 18 and above. We follow previous practices in educational research (Breen *et al.*, 2010; Goldthorpe and Mills, 2008), and confine the analysis to respondents aged 25–69 in this study as most people have completed their education by age 25.

4. Analysis

4.1. *Class effects on educational attainment: Constancy or change?*

4.1.1. *Educational distributions over time and across cohorts*

We begin with descriptive analysis of trends of educational distribution by men and women in China. Trends can be measured in two ways: as changes with historical time or across birth cohorts. Previous analyses of the social stratification of education in China such as Li (2006) and Wu (2012, 2013) address cohort changes because they only use single surveys. Other studies combine data from two or three surveys of adjacent years with rather crude measures of parental social positions (Li, 2014). We examine changes both in terms of historical time and across the cohorts.

Figure 1 shows the trend in historical time, namely, the distribution of the highest educational qualifications obtained by our male and female respondents from 1996 to 2015. With regard to men (panel 1), we find a sharp reduction in the proportions with only primary education or no schooling, from 50.1% in 1996 to 29.4% in 2015, a drop of around 21 percentage points. There was little change in lower-secondary schooling, which remained at around 32% for most of the years covered. Some increase in higher-secondary education is shown, but the change occurred mostly during the first 10 years, with the distributions remaining almost identical from 2005 to 2015. The biggest increase occurred at the tertiary level, from 9.2 to 22.7% at the two ends of the time spectrum covered.

The shape of women's educational distribution is similar to that of men, although the upgrading took place at a slower pace. Throughout the period, women were at a clear disadvantage, being around 15 percentage points more likely than men to have only primary/no education and 5 percentage points behind men in terms of tertiary-level education.

Having looked at the trends over time, we proceed to changes across the cohorts, as shown in Figure 2.³ We can see that while there were some

³The cohorts are designed as those most susceptible to the major impacts of policy changes in China, especially the expansion of higher education that started in 1999. The drawback of this approach is the variable "dating" of the "destination" positions (in terms of class or education) of the respondents in the same cohort as Goldthorpe and Mills (2004: 27) note; yet, this practice also has advantages. Given the fact that our analytical samples are

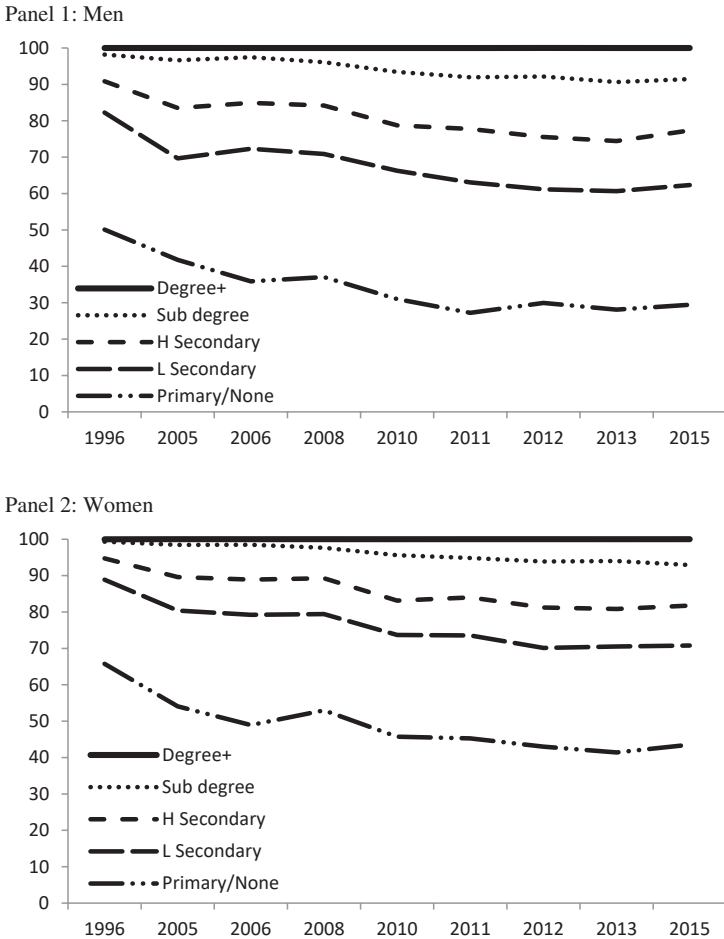


Fig. 1. Distribution of educational qualifications by year and gender, cumulative percentage.

improvements exhibited by the first three cohorts, by far the most obvious change occurred for the youngest cohort who were the greatest beneficiary

confined to those aged 25–69 where mortality rates are relatively low and the fact that, as compared with the situation in the European countries, China’s immigration and emigration rates are low, suggesting that different surveys will contain samples from the same cohorts without too much variability, thus increasing the precision of the origin–education association as Breen *et al.* (2009: 1488) note.

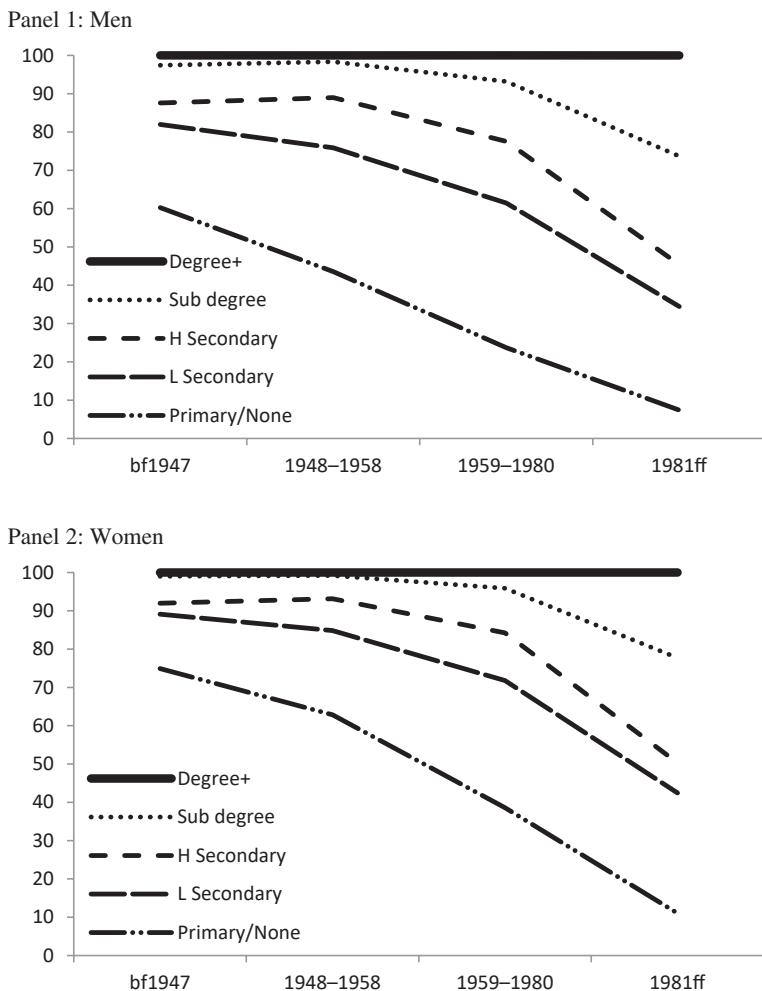


Fig. 2. Distribution of educational qualifications by cohort and gender, cumulative percentage.

of the expansion of the higher-educational sector. This cohort, born after 1981, was able to seize the opportunities unleashed by the increased provision of high education. As shown in panel 1 of the figure, 26% of the men in this cohort had degree-level education or above, with a further 28% having sub-degrees. Only 7% had primary education or below, a sharp reduction of 53 percentage points as compared with the oldest

cohort. Women's profile is similar to that of men. For the youngest cohort as shown in panel 2 of the figure, 22% had degrees or above, with a further 27% holding sub-degrees.

4.1.2. Trends in educational inequality at the overall level

Proceeding to the main concern of this chapter, we assess the association between parental class position and respondent's educational attainment. To begin with, we give an overall view by cross-tabulating parental class and respondent's educational qualifications, and we do that for men and women separately.

Table 1 shows the overall association. For both men and women, we see a clear class gradient, with around 20% of higher salariat's sons as compared with less than 3% of peasants' sons having degree-level

Table 1. Educational distribution of respondents by class of parents (percentage by row).

	Respondent's education					N
	Degree ⁺	Sub-degree	Higher secondary	Lower secondary	Primary/none	
Parental class						
Men						
Higher salariat	19.9	30.4	19.9	22.0	7.9	1,495
Lower salariat	14.6	26.7	19.4	27.4	11.8	2,890
Intermediate	11.6	24.9	17.6	31.5	14.5	2,901
Skilled manual	6.9	20.0	21.3	36.7	15.1	5,097
Agricultural	2.8	8.1	9.8	34.3	45.0	20,319
(All)	5.7	13.5	13.2	33.3	34.2	32,702
Women						
Higher salariat	16.5	28.3	19.9	22.8	12.5	1,582
Lower salariat	11.9	23.1	17.0	27.8	20.2	3,118
Intermediate	9.8	23.6	16.1	32.4	18.1	3,088
Skilled manual	4.8	17.6	19.0	37.9	20.7	5,237
Agricultural	1.2	4.6	5.5	25.5	63.2	21,805
(All)	3.8	10.3	9.6	27.7	48.5	34,830

Notes: Weighted analyses and unweighted data (the same for all analysis in this study). ⁺Means first degree or above.

qualifications, a difference of 17 percentage points. At the other end of the spectrum, we find that only 8% of the sons from the higher salariat families had primary education, whereas 45% of the sons from peasant families were found in this position. If we were to compare the competition between those from higher salariat and those from peasant families in gaining access to degree-level education and in avoiding primary-level education, we would find that the odds ratio runs as high as 41; and if we were to do the same for women, the odds ratio would be even higher, at a staggering level of 70. Higher salariat's sons stand at the opposite end of peasants' daughters in terms of educational stratification.

Space constraints prevent a presentation of origin–education tables for men and women in each year or for each cohort. In order to see the patterns and trends of social fluidity over time and across the cohorts, we use loglinear and UNIDIFF models. We fit three models: The first is the conditional independence model which proposes that all odds ratios defining family origin and educational attainment are at a value of one. This model is unlikely to fit but serves as a useful baseline. The second is the constant social fluidity model (CnSF) which allows for an association between family origins and education but not the three-way interaction; in other words, the model postulates that a constant association between class origin and education would prevail over time or across the cohorts. The third is the log-multiplicative layers effects (known as uniform difference, or UNIDIFF) model which seeks to provide an assessment of the direction and magnitude of the changes in the net association between origins and educational destinations over time or across cohorts.⁴ This third model provides us with a general test of differences in fluidity, testing whether there is a uniform pattern for the odds ratios to be closer to

⁴The models are:

1. baseline model (conditional independence):

$$\log^F_{ijk} = \mu + \lambda_i^O + \lambda_j^E + \lambda_k^Y + \lambda_{ik}^{OY} + \lambda_{jk}^{EY};$$

2. constant social fluidity model (CnSF):

$$\log^F_{ijk} = \mu + \lambda_i^O + \lambda_j^E + \lambda_k^Y + \lambda_{ik}^{OY} + \lambda_{jk}^{EY} + \lambda_{ij}^{OE};$$

3. log-multiplicative or UNIDIFF model:

$$\log^F_{ijk} = \mu + \lambda_i^O + \lambda_j^E + \lambda_k^Y + \lambda_{ik}^{OY} + \lambda_{jk}^{EY} + \lambda_k X_{ij}^{OE},$$

where O stands for class origin, E for educational attainment, namely, the highest level of qualification obtained, and Y for year (or cohort); X_{ij} represents the general pattern of the origins–destinations association and β_k the relative strength of this association.

Table 2. Results of fitting the conditional independence (Cond. ind.), constant social fluidity (CnSF), and uniform difference (UNIDIFF) models to origin-education tables for men and women ($N = 34,309$ and $34,278$, respectively), 1996–2015.

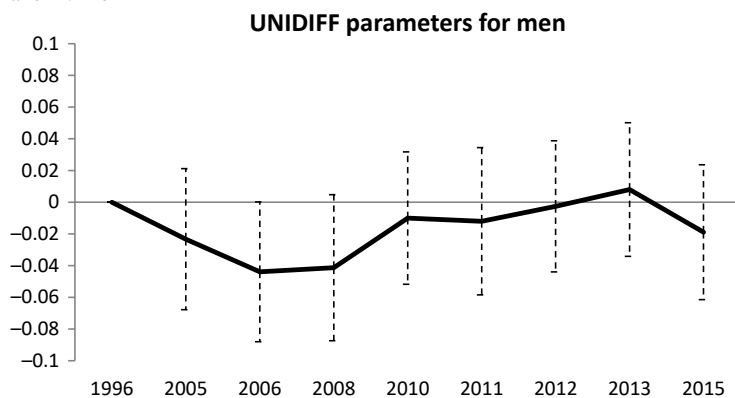
Model	G^2	df	p	rG^2	BIC	Δ
Men						
1 Cond. ind.	5,836.0	144	0.00	0.0	4,332.2	15.8
2 CnSF	240.0	128	0.00	95.9	-1,096.8	2.4
3 UNIDIFF	225.3	120	0.00	96.1	-1,027.8	2.2
2 – 3	14.7	8	0.07			
Women						
4 Cond. ind.	8,417.9	144	0.00	0.0	6,914.2	19.6
5 CnSF	217.5	128	0.00	97.4	-1,119.1	2.3
6 UNIDIFF	212.1	120	0.00	97.5	-1,040.9	2.2
5 – 6	5.4	8	0.71			

Note: rG^2 = Percentage reduction in G^2 ; Δ = Percentage of cases misclassified.

(or further away from) one in a particular layer of the table. If the odds ratios rise above one (or the log odds rise above zero), there is evidence of increasing social rigidity (inequality) and vice versa for social fluidity. We run the models separately for men and women.

Table 2 shows the results of fitting the loglinear and the UNIDIFF models to the origin–education tables for men and women over the period between 1996 and 2015. For both gender groups, we find that none of the three models provide an adequate fit to the data. Furthermore, the UNIDIFF models do not provide a significant improvement in fit over the CnSF model, suggesting little change in the net association between class origin and educational attainment for either sex. The pattern of constant fluidity is shown in Figure 3 using the UNIDIFF β parameters of Models 3 and 6 in Table 2 for men and women, respectively. It is clear from the data that while for men a weakening in the origins–education association was somewhat in train in the first half of the period covered, a strengthening of the association was the main feature in the second half of the period. For women, although the trend line was going downward indicating growing fluidity, none of the point estimates was significantly

Panel 1: Men



Panel 2: Women

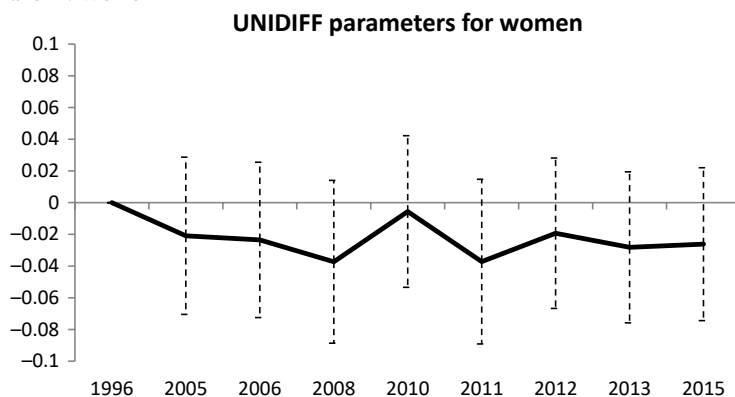


Fig. 3. UNIDIFF parameter estimates and 95% confidence intervals, 1996–2015.

different from the starting point of 1996, indicating a pattern of trendless fluctuation.

Having looked at the over-time data where we found no clear evidence of directional change, we now turn to possible changes across the cohorts. In Table 3, we show the results from the loglinear and UNIDIFF models, where we replaced year of survey with birth cohort. It is interesting to note that while none of the baseline, CnSF, and UNIDIFF models provide an adequate fit to the data for men or women, the UNIDIFF model does show a significant improvement over the CnSF model at a highly significant (0.001) level for men and at a marginally acceptable level

Table 3. Results of fitting the conditional independence (Cond. ind.), constant social fluidity (CnSF), and uniform difference (UNIDIFF) models to origin-education tables for men and women ($N = 34,309$ and $34,278$, respectively), by birth cohorts.

Model	G^2	df	p	rG ²	BIC	Δ
Men						
1 Cond. ind.	5,189.4	64	0.00	0.0	4,521.1	15.4
2 CnSF	204.7	48	0.00	96.1	-296.6	2.5
3 UNIDIFF	158.1	45	0.00	97.0	-311.8	2.2
2 – 3	46.6	3	0.00			
Women						
4 Cond. ind.	8,505.9	64	0.00	0.0	7,837.6	19.6
5 CnSF	215.0	48	0.00	97.5	-286.2	2.5
6 UNIDIFF	207.7	45	0.00	97.6	-262.2	2.5
5 – 6	7.3	3	0.06			

Note: rG² = Percentage reduction in G²; Δ = Percentage of cases misclassified.

(0.06) for women, indicating that significant changes were taking place, clearly for men and plausibly for women too. The β coefficients returned from the UNIDIFF models are plotted in Figure 4. The data for men in panel 1 show that the association between family origin and educational attainment is getting increasingly stronger from the oldest to the youngest cohort, indicating growing social inequality. For women, the data in panel 2 also show signs of growing inequality although this is only significant for the youngest cohort. Overall, greater social inequality is clearly seen over the cohorts and is manifesting itself at a faster pace for men than for women.

4.2. *Class and cohort differences*

We have, in the above, analyzed the association between class origin and educational attainment in China. We found a constant relationship over time but a growing inequality across the cohorts, which holds for men and women alike. The findings on the first part support the thesis of trendless fluctuation over time (Bukodi and Goldthorpe, 2016) and those on the second part give little support to the idea of weakening class inequality in education, as Breen *et al.* (2009) have found for the British and European

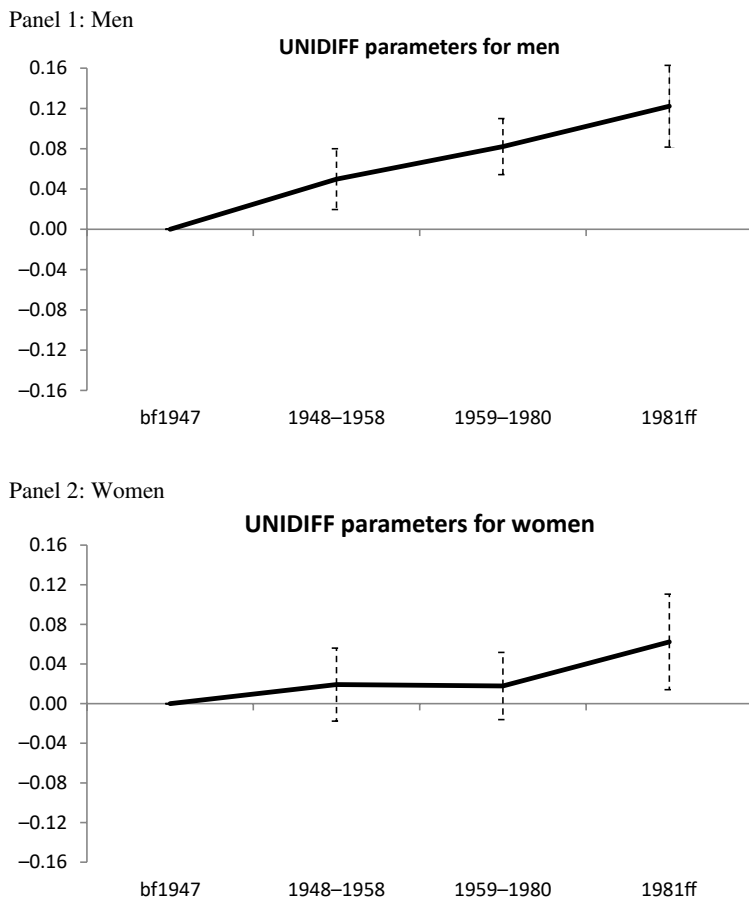


Fig. 4. UNIDIFF parameter estimates and 95% confidence intervals over birth cohorts.

societies. Instead, we find strong evidence of rising social inequality, with parental classes affecting the youngest cohort much more strongly than they did for the older cohorts. The findings on the first aspect suggest that we do not need to conduct further analysis of historical changes, but those on the second aspect merit further analysis. This is because while the log-linear and UNIDIFF models are good at detecting the overall strengths of association between class and education, they do not show how specific class effects on education are changing, at what levels or transitional stages of education. We focus on these in the following.

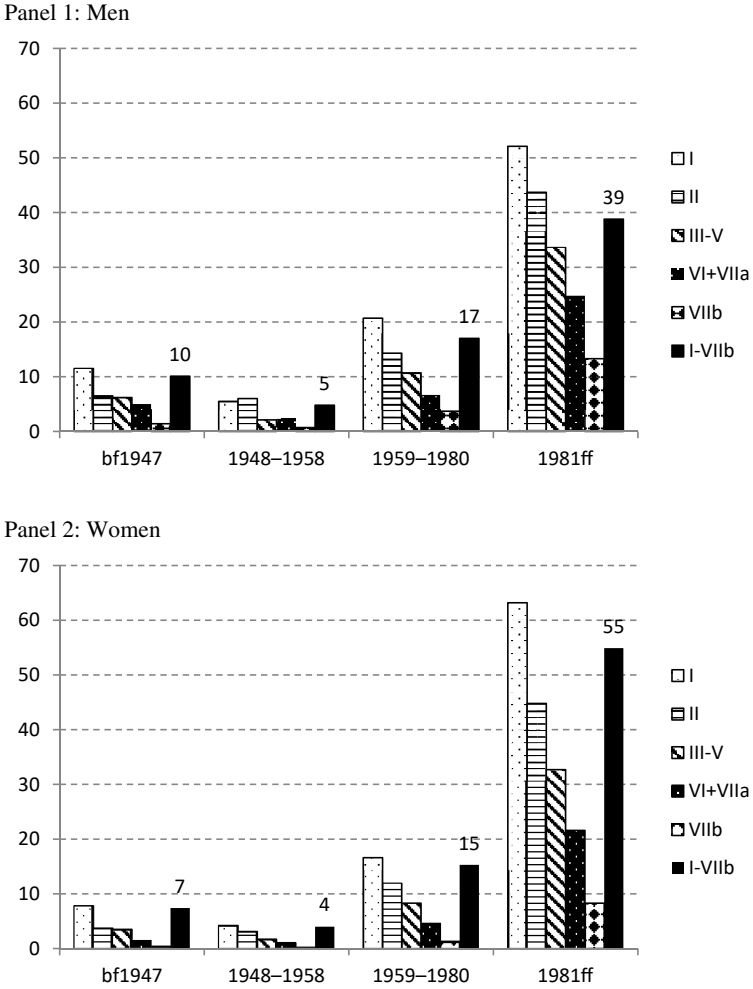


Fig. 5. Probability (%) of having degree-level education by cohort and gender.

To see the growing class differences in educational attainment across the cohorts, we show, in Figure 5, proportions of respondents from each of the class origins who have obtained degree-level qualifications by sex and cohort. We also show the differences between children from higher professional and managerial families and those from agricultural (peasant) origins. For the older cohorts, we would expect a small proportion of men and even a smaller proportion of women to have university education,

which is indeed shown in the data. We would also expect to find emergent class differences in access to university education, which can be detected even for the second-oldest cohort, namely, those born between 1948 and 1958 who would have received tertiary education during the turbulent years of the Cultural Revolution when most of the higher learning institutions were closed. For this cohort, only 1.5% of men and 0.8% of women were able to have university education. Yet, even when egalitarian policies were strictly enforced during this period, with “worker-peasant-soldier” students recruited to universities, we could still see clear class differences: 5.5% of high-ranking cadres’ sons as compared with a mere 0.7% of peasants’ sons attended university, with a disparity ratio of 8:1 or a gap of 4.8 percentage points, as indicated by the filled bar. For women, the figures are 4.2 and 0.2%, with a disparity ratio of 21 or a difference of 4 percentage points. The class differences between Classes I and VII(b) and, to a smaller extent between Classes I and VI–VII(a), echo earlier findings by Deng and Treiman (1997: 417) on what they called the “comparative advantage” between cadres’ and peasants’ sons in years of schooling for the cohorts most vulnerable to the impacts of the Cultural Revolution.

The end of the Cultural Revolution saw the restoration of the national examination for university admission in 1977, and many people who did not have chances to go to university during the previous decade seized the opportunities. We can see that the re-opened universities mainly benefited the urbanites, especially those from higher-ranking professional and managerial families. While 6.5% of men and 1.3% of women could have degree-level education, the class differences between the Classes I and VII(b) children became much larger than in the previous cohorts for both men and women.

As compared with their counterparts in the older cohorts, people in the youngest cohort (born after 1981) were the direct beneficiaries of the higher-education expansion that started in 1999. Indeed, 25% of men and 21% of women in this cohort had degree-level education. Did the rising tide, as represented by the greater provision of higher education, lift all boats together? A look at the data shows that rather than ameliorating the class relations, social inequalities were much exacerbated, with the Class I–VII(b) differences increased to 39 percentage points for men and 55 points for women. While Class I daughters used to lag behind their brothers in access to degree education, this is no longer the case for the youngest cohort, with 63% of Class I daughters as against 52% of Class I sons having degrees. Yet,

for those from peasant families, men were still more likely than women to receive university education, at 13 and 8% respectively.

Overall, the data show a picture of “maximum-maintained inequality” in education in China. Whether the tides were ebbing or flowing, the boats were not being simultaneously lifted, and the bigger the surge of the tide, the more differential the lifting, with some boats being lifted to a higher position than others. Space constraints again prevent us from presenting data on the class-cohort differences at the other levels of educational attainment. In order to gain a good understanding, we resort to statistical modeling.

As our dependent variable is the respondent’s highest level of educational qualification, the most natural technique to use is the ordered logit model. As Breen *et al.* (2009) explain, this method is particularly suited when the educational categories do not fall into a strict order of hierarchy and do not follow a strictly sequential order. Also noted here is the fact that people do not proceed from lower tertiary to degree-level education. This suggests that apart from the ordered logit models where we assess the class-linked differences in access to higher rather than lower levels of education, we need to take into account the possibility that class differences may not be the same at different levels of education. Given this, we use what Heath and McMahon (1997) call the “log continuation ratio models” or what Bukodi and Goldthorpe (2016) call the “thresholds” models. In addition, we need to take into account the different risk pools for the different levels of educational transitions and use the Mare (1980, 1981) model which has also been much used in educational research (Shavit and Blossfeld, 1997; Breen *et al.*, 2009).⁵

⁵The Mare model and the log continuation ratio (threshold) model can be defined as follows.

	Mare’s transition model	Log continuation ratio (threshold) model
Model 1: Primary/N vs. higher	$\log = \frac{E_{1klm}}{E_{2klm} + E_{3klm} + E_{4klm} + E_{5klm}}$	$\log = \frac{E_{1klm}}{E_{2klm} + E_{3klm} + E_{4klm} + E_{5klm}}$
Model 2: LS vs. higher	$\log = \frac{E_{2klm}}{E_{3klm} + E_{4klm} + E_{5klm}}$	$\log = \frac{E_{1klm} + E_{2klm}}{E_{3klm} + E_{4klm} + E_{5klm}}$

With regard to independent variables, we use parental class and year of survey following Breen *et al.* (2009). We present results from three kinds of models: ordered logit models, log continuation ratio (threshold) models, and Mare’s transition models. These will not only reveal the class differences across the cohorts in the different aspects of educational attainment but also allow us to gain a comparative view with findings in the European countries, as shown in Breen *et al.* (2009, 2010) and Bukodi and Goldthorpe (2013, 2016), which are the best studies in this area.

Figure 6 shows the parental-class effects (in terms of log odds) on having higher rather than lower educational qualifications by cohort and sex. Class I for higher-grade professional-managerial families are set as the reference category, with the log odds being zero. Our interest here is to see how distant each of the other family classes is from Class I, in what direction and to what extent the social distances are changing over the cohorts, which would provide a way for gauging whether social inequality in educational attainment remains constant as the “constant fluidity” thesis (Bukodi and Goldthorpe, 2013, 2016) would claim, or whether educational inequality is weakening as the “social progress” thesis (Breen *et al.*, 2009, 2010) would claim.

The data in Figure 6 show, in greater detail than found in Figure 4, that social inequality, in terms of parental class effects on respondents’ gaining higher rather than lower levels of education, is gaining more salience over the cohorts for both men and women in China. For men, the increasing class differences occurred for all lower classes, especially for the intermediate classes (III–V), the manual working class in industry and

Model 3: HS vs. higher	$\log = \frac{E_{3klm}}{E_{4klm} + E_{5klm}}$	$\log = \frac{E_{1klm} + E_{2klm} + E_{3klm}}{E_{4klm} + E_{5klm}}$
Model 4: Sub-degree vs. higher	$\log = \frac{E_{4klm}}{E_{5klm}}$	$\log = \frac{E_{1klm} + E_{2klm} + E_{3klm} + E_{4klm}}{E_{5klm}}$

Here, E represents education, with the Arabic numerals 1, ... ,5 referring to the five-fold education for 1 = primary/none, 2 = lower secondary, 3 = higher secondary, 4 = sub-degree, and 5 = degree or higher. The models take the general form

$$\log \frac{\{E_{iklm}\}}{\{E_{jklm}\}} = W_0 + W_{C(k)} + W_{G(l)} + W_{H(m)},$$

where C represents parental class, G represents parental Chinese Communist Party (CCP) membership, H represents *hukou*, and Ws are parameters to be estimated.

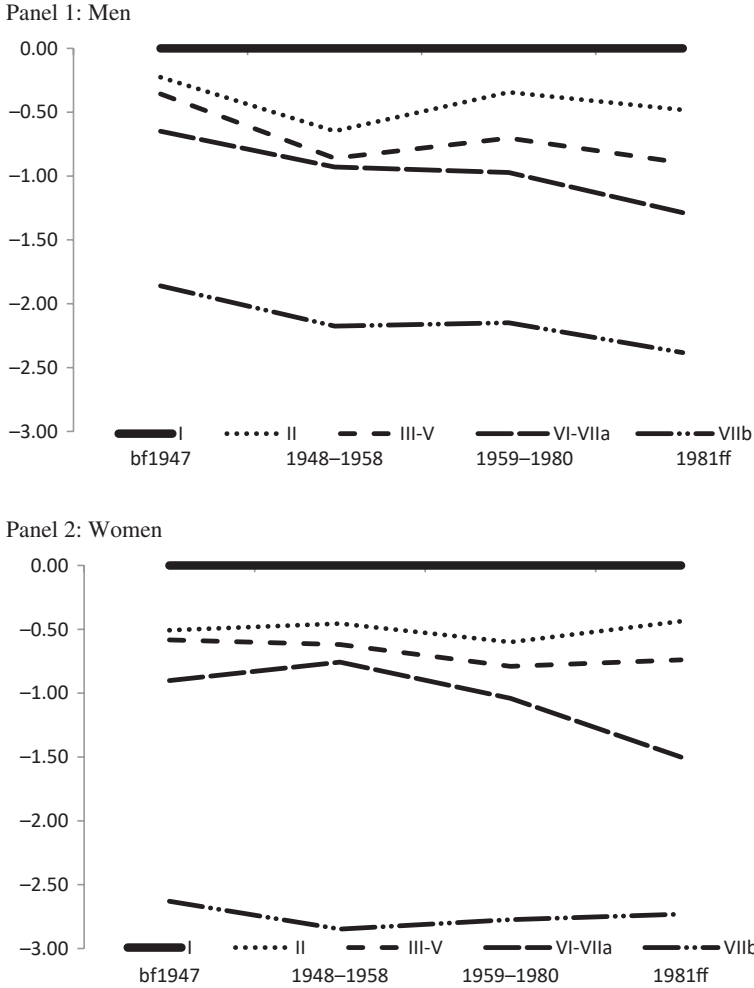


Fig. 6. Ordinal logit models by cohort and gender. Class origin effects over cohorts, controlling for survey effects.

commerce (VI–VII(a)) and the peasant class. For women, it is the manual working class who are found to have fallen further and further behind the higher salariat, from the second-oldest to the youngest cohort. For both men and women in the youngest cohort, we find that the manual working class were not much different from the salariat in the oldest cohort but are now standing half way in between the higher salariat and the peasant

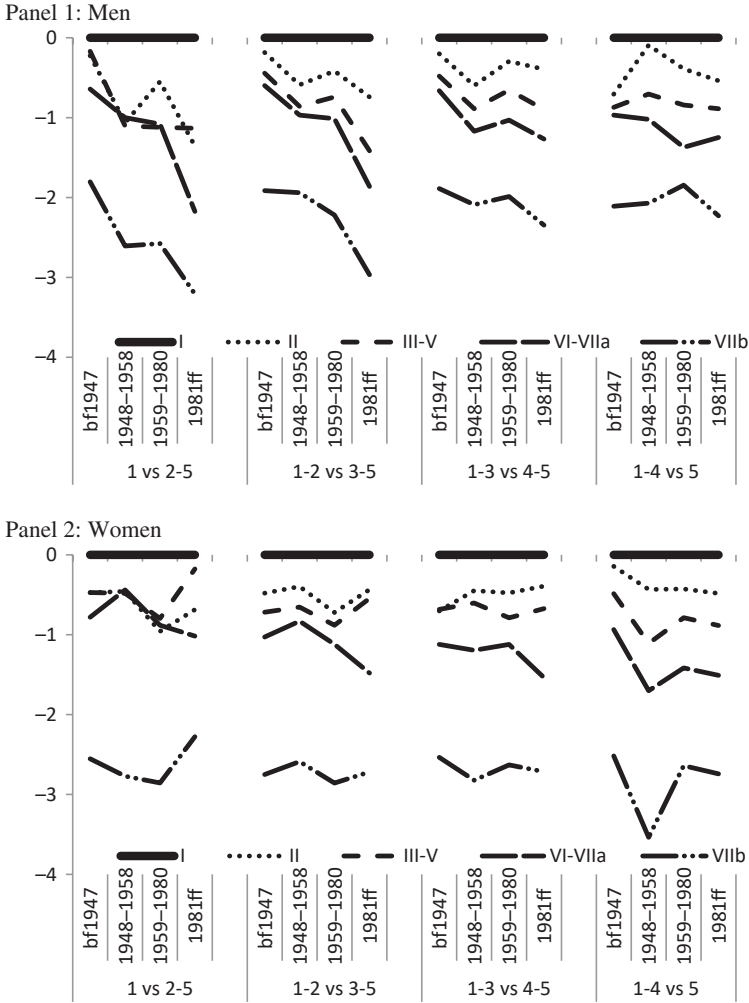


Fig. 7. Log continuation ratios models by cohort and gender. Class origin effects over cohorts, controlling for survey effects.

class. China’s industrial restructuring in the last few decades coincided with a gradual erosion of privileges enjoyed by the manual working class who, from the early 1990s onwards, faced massive lay-offs and had to compete with migrant peasant workers for jobs (Li, 2018). Another notable feature of the figure concerns the disadvantages faced by peasants’ daughters as mentioned earlier. For each cohort, their distances from the

higher salariat peers are the biggest, and there is little change in the relative position across the cohorts.

Looking at the data from log continuation ratio models, as shown in Figure 7, we find that, for men, class differences were large and increasing from older to younger cohorts at the two lower thresholds, namely, between primary/none and higher (1 vs. 2–5) and between up to lower secondary and higher (1–2 vs. 3–5). At the next two thresholds, class differences were still large but were becoming more stable across the cohorts. Overall, the most salient class differences occurred at the lower thresholds where the majority of men from lower origins had very limited chances of obtaining higher levels of education. With regard to women, class differences were larger than those for men at all thresholds and they also remained more constant than for men.

Finally, in this section, we take a look at Mare's transition models. This model is concerned with social inequality in making a given educational transition conditional on being at risk of doing so. In China, people may not strictly follow the sequences in making educational transitions, which was a common occurrence during the three years (1977, 1978, and 1979) in university admission immediately after the end of the Cultural Revolution.

The data in Figure 8 show the class differences across the cohorts at each of the four transition stages for men and women. With respect to men, we can see that, as compared with Class I, all other classes were becoming more distant from older to younger cohorts at the first two transitions. In other words, people from manual working-class and peasant origins were becoming more disadvantaged in the competition with their higher-salariat peers. At the absolute level, we find increasing proportions of workers' and peasants' children attending primary and lower-secondary levels and transiting to higher levels, but at the relative level, we find that their peers from higher-salariat families were making the transitions at a faster rate. For people who persisted to the third and fourth transitional stages, class differences were reduced but there were still clear signs of widening class differentials from the older to the younger cohorts, with the coefficients for peasants' children enlarging, which in log forms changed from -0.73 to -0.97 , both highly significant at the 0.001 level. The growing class differences for women were also clear. By comparison, daughters from worker and peasant families were facing even greater disadvantages than their brothers in transitioning from higher secondary to tertiary, and from lower to higher tertiary, forms of education. All this gives strong substantiation to patterns found in Figure 4.

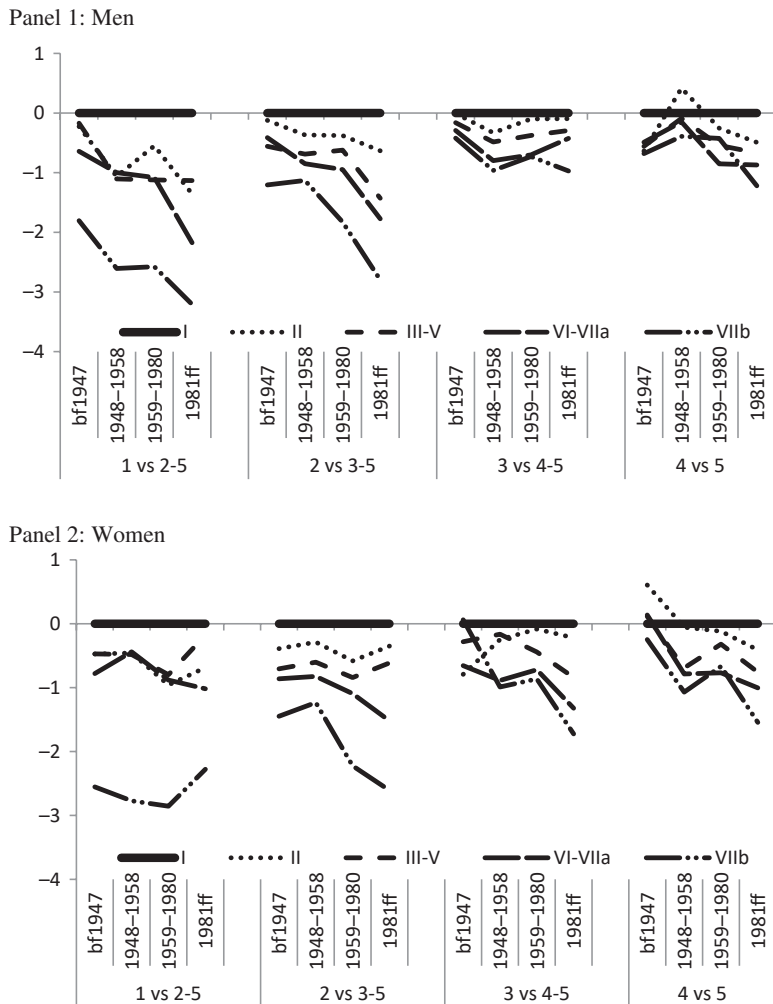


Fig. 8. Mare's transition models by cohort and gender. Class origin effects over cohorts, controlling for survey effects.

5. Discussion and Conclusion

Using the most authoritative national representative surveys currently available spanning 20 years, this chapter conducts a detailed analysis of social inequality in educational attainment for men and women in China. Our main findings can be summarized as follows:

- China made great strides in educational provision in the last two decades, with particular regard to the sharp reduction in proportions with only primary levels of education or below and the growing proportions with tertiary levels of education (Figure 1). The changes were even more pronounced if we look at the cohort data. In the oldest cohort, born before 1947, the great majority of men and women were semi-illiterate: 60% of men and 75% of women had only primary education or no schooling at all. Among the youngest cohort, namely, those born after 1981, around half had tertiary education (54% for men and 49% for women (Figure 2). There is evidence that gender gaps were narrowing or even being reversed in education.
- As for our main interest in the chapter, we wish to explore the direction and magnitude of changes in the social inequality of education, with changes measured in both historical times (from 1996 to 2015) and across the cohorts that reflect the impacts of major socio-political events and government policies on education in China. Our evidence shows a close association between people's family class and their own education. Using loglinear and UNIDIFF models, we found a constant association between parental class and children's education over time and a strengthening association across the cohorts.
- Our findings on the rising social inequality across the cohorts are clearly different from those on European countries by Breen *et al.* (2009, 2010) and on Britain by Bukodi and Goldthorpe (2013, 2016). To recap, Breen *et al.* found evidence of loosening association and Bukodi and Goldthorpe found the same using the absolute measure of education but trendless fluctuation using the relative measure of education. To the best of our knowledge, no major studies in the Western countries have shown rising inequality in education as we have found for China.

How do we explain the differences between our and their findings? I would think that the differences reflect the changing socio-economic conditions of origin classes in the Western countries and China. In the Western countries, the progressive taxation system and the welfare state policies, including the increasing provision of secondary education and state help in the form of grants, maintenance fees, or student loans may have reduced the barriers of working-class children in educational attainment as Breen *et al.* (2009) discuss. Not only has the working-class

economic situation improved, their children have also got higher aspirations for educational and occupational attainment, a point recognized by Goldthorpe (2007). The decreasing social inequality in education as found by Breen and colleagues has been echoed by findings in social mobility in Britain in the last 40 years (Li and Heath, 2016).

In China, class-linked inequalities have increased. People in top socio-economic positions have benefited much more from the open-up and reform policies than the rest of the population, with social chasms becoming deeper than before. It is also noted that in this study we tend to, as do other scholars (Wu and Treiman, 2007), contrast the higher-grade professional-managerial salariat with agricultural workers. But the latter (peasants) is changing more rapidly than the working class in the Western countries. There are 280 million migrant peasant workers in China, suggesting that the better-educated and able-bodied people in the countryside have moved to cities for a better life. Those staying in the countryside tend to be older, less healthy, and poorly educated. We are therefore comparing a higher salariat with an ever-increasing command of socio-economic-cultural resources with a contracting peasant class with limited socio-economic resources. In the international perspective, it is the relatively improving condition of the working class in the Western countries and the relatively deteriorating condition of the peasant class in China that explains the divergence of educational inequality. It is the socio-economic conditions that shape educational outcomes. In both China and the Western countries, the advantaged make the best use of the resources at their disposal to keep the inequality both maximally and effectively maintained.

The research in this study has shortcomings. The most obvious is that we are constrained by the available data, with educational qualifications confined to major categories. China is a notoriously hierarchical society, with layers of stratification even at the same level, from kindergarten to university education. There are various provincial-level key schools, schools attached to major universities, and increasingly in recent times, private (fee-paying) schools. At the university level, there are “double-first-class” (world-class university and world-class disciplinary areas,⁹ first proposed by the Ministry of Education in 2015), “985,” and “211” types of university. Even at the very top, there are significant layers, with Peking University and Tsinghua University being the most prestigious,

the rest of the top 10, and then the remaining “985” (altogether there are 39 universities in this group), akin to Oxbridge amongst the Russell Group universities in Britain. We are not able to address nuanced inequalities due to data limitation. Future analyses will try to address such issues when suitable data become available.

References

- Becker, G. 1962. Investment in human capital: A theoretical analysis. *The Journal of Political Economy* 70(5): 9–49.
- Bell, D. 1972. On meritocracy and inequality. *The Public Interest* 29: 29–68.
- Blanden, J., Gregg, P. and Machin, S. 2005. Educational inequality and intergenerational mobility. In S. Machin and A. Vignoles (eds.), *What's the Good of Education? The Economics of Education in the UK*. Princeton, NJ: Princeton University Press, pp. 99–114.
- Boudon, R. 1974. *Education, Opportunity and Social Inequality, Changing Prospects in Western Europe*. New York: Wiley.
- Breen, R. and Goldthorpe, J. 1997. Explaining educational differentials: Towards a formal rational action theory. *Rationality and Society* 9(3): 275–305.
- Breen, R., Luijckx, R., Müller, W. and Pollak, R. 2009. Nonpersistent inequality in educational attainment: Evidence from eight European countries. *American Journal of Sociology* 114: 1475–1521.
- Breen, R., Luijckx, R., Müller, W. and Pollak, R. 2010. Long-term trends in educational inequality in Europe: Class inequalities and gender differences. *European Sociological Review* 26: 31–48.
- Bukodi, E. and Goldthorpe, J. H. 2013. Decomposing “social origins”: The effects of parents’ class, status and education on the educational attainment of their children. *European Sociological Review* 29: 1024–1039.
- Bukodi, E. and Goldthorpe, J. H. 2016. Educational attainment — Relative or absolute — As a mediator of intergenerational class mobility in Britain. *Research in Social Stratification and Mobility* 43: 5–16.
- Bukodi, E. and Goldthorpe, J. H. 2019. *Social Mobility and Education in Britain: Research, Politics and Policy*. Cambridge: Cambridge University Press.
- Bukodi, E., Goldthorpe, J. H. and Zhao, Y. 2021. Primary and secondary effects of social origins on educational attainment: New findings for England. *The British Journal of Sociology* 72: 627–650.
- Deng, Z. and Treiman, D. J. 1997. The impact of the cultural revolution on trends in educational attainment in the people’s Republic of China. *American Journal of Sociology* 103: 391–428.
- Goldthorpe, J. H. 2007a. *On Sociology*. Stanford, CA: Stanford University Press.
- Goldthorpe, J. H. 2007b. Cultural capital: Some critical observations. *Sociologica* 2007(2): 1–23.

- Heath, A. and McMahon, D. 1997. Education and occupational attainments: The impact of ethnic origins. In Karn, V. (ed.), *Ethnicity in the 1991 Census: Employment, Education and Housing among the Ethnic Minority Populations of Britain*. London: The Stationery Office, pp. 91–113.
- Hout, M. 1988. More universalism, less structural mobility — The American occupational structure in the 1980s. *American Journal of Sociology* 93(6): 1358–1400.
- Kahneman, D. 2011. *Think Fast and Slow*. London: Allen Lane.
- Li, C. 2014. The changing trend of educational inequality in China (1940–2010): Reexamining the urban-rural gap in educational opportunity. *Sociological Research* 2: 65–89 (in Chinese).
- Li, C. 2018. The role of education in social stratification. In Li, P. (ed.), *Changes in Social Stratification and Class Division in Contemporary China*. Beijing: Social Sciences Academic Press (China), pp. 261–291 (in Chinese).
- Li, P. 2018. Social stratification and class structure in China: Changes, issues and policy responses. In Li, P. (ed.), *Changes in Social Stratification and Class Division in Contemporary China*. Beijing: Social Sciences Academic Press (China), pp. 1–24 (in Chinese).
- Li, Y. 2006. Institutional change and educational inequality: Mechanisms in educational stratification in urban China (1966–2003). *Social Science in China* 4: 97–207.
- Li, Y. 2021. Entrenched inequalities? Class, gender and ethnic differences in educational and occupational attainment in England. *Frontiers in Sociology*, 5: 1–17. doi: 10.3389/fsoc.2020.601035.
- Li, Y. and Heath, A. 2016. Class matters: A study of minority and majority social mobility in Britain, 1982–2011. *American Journal of Sociology* 122(1): 162–200.
- Li, Y., Zhang, S. and Kong, J. 2015. Social mobility in China and Britain: A comparative study. *International Review of Social Research* 5(1): 20–34.
- Li, Y. and Zhao, Y. 2017. Double disadvantages — A study of ethnic and *hukou* effects on class mobility in China (1996–2014). *Social Inclusion* 5(1): 5–19.
- Lucas, S. 2001. Effectively maintained inequality: Education transitions, track mobility, and social background effects. *American Journal of Sociology* 106: 1642–1690.
- Mare, R. 1980. Social background and school continuation decisions. *Journal of the American Statistical Association* 75(370): 295–305.
- Mare, R. 1981. Change and stability in educational stratification. *American Sociological Review* 46: 72–87.
- Raftery, A. and Hout, M. 1993. Maximally maintained inequality: Expansion, reform, and opportunity in Irish education: 1921–1975. *Sociology of Education* 66(1): 41–62.

- Shavit, Y. and Blossfeld, H-P. (eds.) 1993. *Persistent Inequality: Changing Educational Attainment in 13 Countries*. Boulder, CO: Westview Press.
- Treiman, D. 1970. Industrialization and social stratification. In E. O. Laumann (ed.), *Social Stratification: Research and Theory for the 1970s*. Indianapolis: Bobbs-Merril, pp. 207–234.
- Wu, X. and Treiman, D. J. 2007. Inequality and equality under Chinese socialism: The *Hukou* system and intergenerational occupational mobility. *American Journal of Sociology* 113(2): 415–445.
- Wu, Y. 2012. Gender differences in educational attainment in China. *Society* 4(32): 112–137 (in Chinese).
- Wu, Y. 2013. Educational opportunities of Chinese rural and urban residents in 1978–2008: Inequality and evolution. *Social Sciences in China* 3: 4–21 (in Chinese).
- Wu, Y. and Du, S. 2018. The development of higher education over 40 years since China's reform and opening-up. *Journal of Social Development* 2: 1–21 (in Chinese).
- Zhou, X. and Hou, L. 1999. Children of the cultural revolution: The state and the life course in the people's Republic of China. *American Sociological Review* 64(1): 12–36.