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15. EDUCATION AND CAREER MOBILITY UNDER CHINA'S MARKET ECONOMY

A Pre- and Post-Reform Comparative Analysis

INTRODUCTION

In this chapter, we examine two related issues. First, to what extent has the pattern of educational attainment changed from the pre-reform to post-reform periods? Second, has education played an increasing role on work careers during the reform periods? To seek an empirical answer to these questions, we analyse a recent large-scale household survey in which relevant information was collected.

China has attached great importance to education since 1978 when the country redesigned its developmental strategies through the reform and opening-up policy (Guo et al., 2013). Deng Xiaoping, then the country's top policymaker and paramount leader, initiated and developed the strategy of modernizing China through science and education.¹ By 2012, more than three decades after the introduction of reforms, China had made a dramatic progress in education: a nine-year compulsory education system was in firm ground, with nearly perfect school enrolment rates up to the ninth grade. In addition, rate of admissions to high school increased from 10% of the relevant ages in 1978 to 85% in 2012, and that to college jumped from a merely 1% in 1978 to a remarkable 30% in 2012.² This impressive progress, combined with a population of 1.36 billion and a fast growing economy, has put China up front as one of the most competitive countries in education and human capital around the world.³

Despite the great accomplishments in education, at the same time educational inequality has become a serious issue in China. For instance, while the 9-year compulsory education looks good in official statistics, public schools at all levels have become increasingly stratified as the central and local governments identified key schools to which human and financial resources disproportionately flew. Subsequently, there has been a heated competition for attending the key schools, and children faced a severely unequal school system from the very start of educational attainment (Yang, 2006). Inequality in access to high school and college education is even worse, since admissions are regionally and nationally competitive. To be sure, the expansion of higher education since 1999 has significantly increased college enrolments, but studies show that those from rural areas or low-income families continued to be underrepresented (Li, 2006), especially among students admitted to nationally leading universities (Li, 2010; Liu, 2006). Under the pressure of highly

competitive job market of college graduates, increasing numbers of high school graduates begin abandoning college entrance examination, and a Cultural Revolution slogan “*Education is Useless*” has made a surprising comeback.⁴

Educational inequality has drawn great attention from China’s top officials. Most recently, Premier Li Keqiang pointed out that “educational equality is the cornerstone of social equality, and it is a key mechanism of social mobility and social justice.” Li recognizes the most obvious forms of educational inequality, namely, the regional variation and the rural-urban divide in educational opportunities. He has put forward a plan to allocate significantly more resources to boost education in western regions and rural areas.⁵ However, it is too early to assess the extent to which this plan may or may not make an expected difference.

Chinese scholars share two views about educational equality and inequality. On the one hand, equalizing educational opportunities is a social ideal, one that must continue to guide governmental policies to equally and fairly allocate educational resources. On the other hand, education is considered as a justifiable mechanism for labour market inequalities. That is, unequal career outcomes are justified so far as they are positively associated with education. Accordingly, empirical studies have been organized to answer two interrelated questions: Has the degree of inequality in access to education increased or decreased over the years of market reforms? Has the effect of education on career outcomes increased or decreased as market reforms deepened across the years? By focusing on these two questions, in the next two sections we review relevant studies and propose research hypotheses to guide our data analysis.

HAS INEQUALITY OF ACCESS TO EDUCATION INCREASED OR DECREASED?

To Chinese intellectuals, equality in access to education is to be achieved through three interrelated aspects of an integral process: equality in school enrolment, equality in within-school treatment, and equality in quality of education provided to children of diverse backgrounds (Yang, 2006). Analytic attention has, however, been given only to the first of these aspects, with a focus on changing variation in attainment of college education by gender, rural-vs.-urban *hukou* (i.e., place of residence with an officially recognized household registration), and family backgrounds before and after the reforms.

An early study sent a depressing message that the reforms did not alter the ascriptive processes of educational inequality. Researchers found that sons of officials and professionals from large cities continued to have higher levels of education than sons of workers from the pre-reform to post-reform periods (Zhou et al., 1998). A later study confirmed this finding but also reported worse [news: inequality in](#) educational attainment by family backgrounds and rural-vs.-urban *hukou* was significantly greater in the post-reform era than the pre-reform era (Li, 2003). While both of these studies stressed the role of family backgrounds in educational attainment, a third study (Li, 2006) shows that the reforms have shifted the pattern of family

influence from educational inheritance to resource investment: while children of higher educated parents got better education in the early reform years, children of parents with higher positions of power and greater cultural capital received higher levels of education than their counterparts when the reforms deepened after 1992. The continuity and change in patterns of educational inequality by ascriptive factors have, one scholar argued and showed in his analysis of Chinese General Social Survey (Hao, 2007), resulted from the political logic that vested interests are an important cause to the launch and success of gradual reforms. This is also a strong message learned from the “market transition debate” (Bian & Logan, 1996; Nee, 1989, 1996; Parish & Michelson, 1996; Zhou, 2000).

One important event in China's educational development is the 1999 expansion of higher education. To what extent did the expansion policy increase or decrease inequality in access to higher education? Empirical inquiries have been guided by two hypotheses originated in the West. The first is the Maximally Maintained Inequality (MMI) hypothesis (Raftery & Hout, 1993), which predicts that children of advantageous classes will maximize their educational demands before children of disadvantageous classes can benefit from the expansion of higher education. The second is the Effectively Maintained Inequality (EMI) hypothesis (Lucas, 2001), which predicts that even if children of disadvantageous classes can attain higher education after the expansion satisfies the demands of children of advantageous classes, the quality of education received by children of the two class backgrounds will differ. China's post-1999 trends support these hypotheses: While children of upper class backgrounds attained 4-year colleges, those of lower class backgrounds most likely went to community colleges for 2 or 3 years of higher education (Liu, 2006). The same kind of inequality was found between children of urban and rural origins, and between children of the *Han* origin and those of other ethnic origins (Li, 2010). And these patterns got worse in later reform periods than in early reform periods (Li, 2006).

Built upon these previous studies, in this chapter we will exam two issues about the effect of family background on educational attainment. First, does the family impact on educational attainment at all levels of education? With this issue, we differ from the previous researchers by focusing not just on higher education but on all levels of secondary and post-secondary education. Second, has the effect of family background on educational attainment increased, stabilized, or decreased across different periods of market reforms? Here, our focus is not just on whether or not the reforms matter for educational attainment, but more on the intended and unintended consequences of reform policies across the different reform periods. To guide our data analysis, we state the following hypotheses:

- *Hypothesis 1: Family backgrounds affect children's educational attainment in all levels of secondary and post-secondary education.*
- *Hypothesis 2: The effect of family background on children's educational attainment will increase from early to later periods of the reform era.*

HAS THE EFFECT OF EDUCATION ON CAREER OUTCOMES
INCREASED OR DECREASED?

To this question, Nee (1989, 1996) has offered a bold statement in support of a positive answer. His point of departure is that the previous system of state redistribution provided no power, incentives, or opportunities to peasants, workers, intellectuals, and entrepreneurs. The emergence of a market system will liberate these “direct producers” from the control by bureaucratic “redistributors.” Since markets will value the education, skill, experience, and entrepreneurship of direct producers, and relatively devalue the political capital of redistributors, transition to a market economy will increase the positive effect of education, along with other forms of human capital, on career outcomes. In the same process, the positive effect of political capital on career outcomes will be on the relative decline. Details aside, the above is the core of Nee’s market transition theory.

Nee’s market transition theory has inspired a great interest in China’s changing system of social stratification, with a focus on relative efficacies of education and political capital in career outcomes. Facing a complex political economy like China’s, researchers raised two concerns. One is about the implausibility of the assumption that the increasing significance of education implies the decreasing significance of political capital. This assumption is implausible because China’s market system grew under the shadow of a durable Communist party-state (Bian & Logan, 1996; Parish & Michelson, 1996; Walder, 1996, 2003; Zhao & Zhou, 2002; Zhou, 2000, 2002). In this circumstance, political power needs not decline while educational credentialism is on the rise. A related concern is about the unrealism that markets will unconditionally increase the value of education; instead, returns to education may not be high in undeveloped labour markets (Xie & Hannum, 1996), and a reformed state sector may value education nearly as much as the private sectors (Zhou, 2000; Wu & Xie, 2003).

Many of the above-cited studies were conducted in the 1980s and 1990s, when marketization and especially privatization did not develop fully before China entered the WTO in 2001 (Naughton, 2007). In this chapter, we analyze a 2009 household survey, which not only gives us retrospective data that cover sufficient long periods of pre- and post-WTO observations, but also provides a good set of variables on survey respondents’ career placements at the entry of labour markets and their career outcomes by the year of the survey. With these data, we will be able to test the following hypotheses:

- *Hypothesis 3: One’s education will affect one’s career placements at labour market entry, and such effect will be getting stronger in later than earlier reform periods.*
- *Hypothesis 4: One’s education will affect one’s mobility into an elite position, and such effect will be getting stronger in later than earlier reform periods.*

DATA AND VARIABLES

Our data come from the “Job-Search Networks Project” (JSNet, 2009). Under the leadership of Yanjie Bian, this household survey was designed to examine the roles of social networks in employment processes. It was conducted in 2009 in eight large Chinese cities (Changchun, Guangzhou, Jinan, Lanzhou, Shanghai, Tianjin, Xiamen, and Xi’an), and through a multi-stage stratified probability design the total sample size was 7102 adults aged 18 and older. Although we had datasets from other surveys in our possession, this JSNet 2009 dataset best satisfies our requirements for kinds of variables needed to test our research hypotheses. Table 1 describes the chosen variables for our analysis.

Table 1. Descriptive information of variables ($N = 7074$)

<i>Variables</i>	<i>%</i>	<i>Variables</i>	<i>%</i>	<i>Variables</i>	<i>%</i>
<i>Respondent's attribute</i>		<i>Respondent's career</i>		<i>Respondent's father</i>	
Gender		First Job Occupation		Education	
Female	53.1	Managerial	12.0	Elementary or lower	36.5
Male	46.9	Professional	16.8	Middle	19.4
Age		Working	71.2	High or equivalent	18.3
18–29	21.1	First Job Sector		College or above	10.4
30–39	20.6	State	70.2	Political Identity	
40–49	22.6	Non-state	29.8	Non-CCP member	60.9
50–59	23.3	Year of Job Entry		CCP member	25.7
60–69	12.2	1956–1979	33.3	Work Sector	
70–77	0.2	1980–1992	27.7	State	58.5
Hukou		1993–2001	20.1	Non-state	9.3
Rural	10.3	2002–2009	18.9	Work Unit Rank	
Urban	89.7	Job Mobility		Central	9.2
Location of residence		No	54.2	Provincial	17.1

(Continued)

Table 1. (Continued)

<i>Variables</i>	<i>%</i>	<i>Variables</i>	<i>%</i>	<i>Variables</i>	<i>%</i>
<i>Respondent's attribute</i>		<i>Respondent's career</i>		<i>Respondent's father</i>	
Inland area	48.2	Yes	45.8	Municipal	25.7
Coastal area	51.8	Mode of Mobility		County or lower	12.7
Education		Working to Working	26.2	Not ranked	8.3
Middle or lower	28.3	Working to Elite	7.4	Father's Occupation	
High or equivalent	34.8	Elite to Elite	1.8	Managerial	4.3
2- or 3-year college	17.0	Elite to Working	4.9	Professional	4.5
4-year college or above	19.9	Missing values	5.5	Other	78.9

Note: Percentages are not added to 100% for the father's variables because a good proportion of the respondents' fathers had deceased or the respondents chose not to report the information about their fathers.

Respondent's Attribute Variables

The JSNet 2009 dataset gives us a valid sample of 7047 adult respondents, with an age range of 18-77. Females are more than males, and which a higher female proportion is characteristic of all household surveys around the world. Since this survey was conducted in the cities, it is not surprising to have a small proportion (slightly more than 10%) of the respondents with a rural *hukou* at the time of the survey. These people were rural migrants working in the cities, but the government still had their home villages as the registered place of home. Of the total respondents, slightly more than 48% resided in inland cities, and nearly 52% in coastal cities. This geographic balance results from the sampling design intended to make a reliable analysis of inland-coastal comparison.

Education is one of the key variables for analysis. For our purpose, we measure education in four levels. The first level is middle school or lower, at 28.3%. This level marks the completion of a 9-year compulsory education, which is least influenced by family backgrounds. This is a baseline reference for educational attainment. The next higher level is high school or equivalent, at 34.8%. This includes regular high schools and various vocational schools, all of which ran 3-year programs. Attainment of this level of education is influenced by family backgrounds. The third level is 2- or 3-year college, at 17.0%, most of which emerged during the

post-1999 expansion of higher education. This is a level of education attained by those who, for one reason or another, could not get admissions to regular four-year colleges. We will pay close attention to the extent to which family backgrounds affect the attainment of this level of education. Finally, the highest level of education is regular 4-year college or above, at 19.9%. We could have isolated postgraduate education if enough respondents had earned that level of education. The current, merged category will satisfy our analytic need to examine the extent to which family backgrounds affect an individual's opportunity for access to the highest level of education in China.

Respondent's Career Variables

Table 1 (second column) presents a number of variables measuring respondents' career placements at job entry and the direction of mobility if they had changed jobs over their job careers up to the year of the survey. For career placements made at job entry, our main variable is first-job occupation, measured in three major class categories: managerial elite (12.0%), professional elite (16.8%), and the working class (71.2%). Please note that "elite" might be confusing for any entry level jobs; we use this term for a terminal consistency between first-job and current-job occupations. We want to recognize someone's entry into an elite class-category, even if it took time for him/her to move into elite status on the job. This distinguishes from others whose first jobs were a working class job. Although the three categories are broad, they make theoretical distinctions in terms of the power and skills that are embedded in different occupations: managerial elite has both power and skill, professional elite has skill but not power, and members of the working class have neither and must engage in manual work in a paid job.

For career placements at job entry, we also measure whether one's first job was in the state sector (70.2%) or the non-state sector (29.8%). Please note that this is about the respondent's past history, and the data clearly show that most of the respondents started their first jobs in the state sector. Since working conditions, fringe benefits, and career trajectories were significantly unequal between the state and non-state sectors in the pre-reform period (Walder, 1986), this sector distinction had a strong status-attainment implication before the reforms (Bian, 1994; Lin & Bian, 1991; Walder, 1992).

This sector distinction has partly continued and partly changed during the reforms (Bian & Logan, 1996; Nee, 1989, 1996; Wu, 2003; Zhou et al., 1996). To examine how career placements are affected by the reforms, we recognize four different periods of job entry: (1) the pre-reform period, 1956–1979, at 33.3%; (2) the early reform period, 1980–1992, at 27.7%; (3) the later reform period, 1993–2001, at 20.1%; and (4) the post-WTO period, 2002–2009, at 18.9%. In each period, we have a sufficient number of respondents, which will allow for a reliable statistical analysis across the periods.

For career mobility, we measure whether or not a respondent had ever changed his/her job by the year of the survey, and, if so, what direction one's job change took for career mobility. As shown in [Table 1](#), 54.2% of the respondents had never changed jobs and 45.8% had. For job changers, we consider five modes of career mobility: mobility within the working class, 26.2%; upward mobility from a working-class position to a managerial or professional elite position, 7.4%; mobility between the two elite categories, 1.8%; and downward mobility from an elite position to a working-class position, 4.9%. We also found a proportion of people who had changed jobs but did not report specific occupational types in the first or the current job, causing a 5.5% "missing values" in the career mobility variable. The percentages given above are of the total respondents.

Respondent's Father Variables

What family backgrounds matter for one's career placements and career mobility into elite positions? In theory, there are many. Ideally, the more family background variables there are in a dataset, the more rigorous empirical tests we are allowed to offer. This understanding has driven us to extend our search for the best available dataset. One serious constraint is that we cannot combine different datasets if they contain different kinds of variables however they are relevant. Of a few datasets we have obtained, all of them fall into this unfortunate situation. We decided to use the JSNet 2009 dataset primarily because it provides most variables on family backgrounds. Although the family background variables are about father's attributes and careers and not about mother's, the five father variables are all measured at the respondent's job entry which satisfies our analysis.

These father's variables are: education (4 levels), political identity (whether or not a Communist Party member), work sector (state vs. non-state), employer's governmental affiliation (central, provincial, municipal, county or lower, and not affiliated), and occupation (managerial elite, professional elite, and working class). Because some of the respondents did not report their father's information (that father had deceased was a likely reason), we had a fairly large number of "missing values" for some of the father variables. Nonetheless, these father's attribute and career variables will allow us to quantitatively assess the effects of family backgrounds on educational attainment, career placement at job entry, and career mobility outcomes.

RESULTS OF STATISTICAL MODELS

We have obtained four sets of statistical results in testing our hypotheses. We present and interpret these results in turn. A methodological note surfaces here. For a dichotomous dependent variable, we estimated binary logistic regression models. For a multi-category variable, we estimated multinomial logistic regression models. The tables that follow shortly present regression coefficients, whose directions, magnitudes, and levels of statistical significance are used to test our hypotheses.

Educational Attainment

Results in Table 2 provide a consistently strong support for Hypothesis 1. The dependent variable measures four levels of education. The coefficients indicate the effects of father's variables on children's attainments of a specific level of education in contrast to a common level of middle school education, which is the completion of compulsory education in China. We note three impressive sets of father's effects.

Table 2. Family background and educational attainment

Covariates	High school	3-year college	4-year college
<i>Father's Variables</i>			
Middle school education	0.538***	0.848***	0.693***
High school education	0.825***	1.573***	1.677***
College or above education	1.254***	2.077***	2.651***
CCP Member	0.232**	0.528***	0.589***
Professional Elite	-0.375	-0.617	-0.720*
Working Class	-0.502*	-0.990***	-1.326***
State sector	-0.163	-0.094	-0.177
Provincial work unit	-0.261	-0.523**	-0.297
Municipal work unit	-0.279*	-0.493**	-0.348*
County-lower work unit	-0.413**	-0.597**	-0.380
Not affiliated work unit	-0.601**	-0.872***	-0.428
Other work units	-0.675**	-0.821**	-0.793**
<i>Respondent's Variables</i>			
Gender (male = 1)	0.123	0.277***	0.648***
Job entry 1980-1992	0.709***	0.958***	1.116***
Job entry 1993-2001	0.743***	1.912***	2.437***
Job entry 2002-2009	1.112***	2.663***	3.566***
Hukou (urban = 1)	1.204***	1.913***	3.332***
Region (coastal = 1)	0.042	0.216**	0.489***
Intercept	-0.742*	-2.700***	-4.802***
<i>N</i>		7047	
Pseudo <i>R</i> ²		0.149	
Likelihood		-8075.6	

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

First, father's educational status strongly affects children's attainment of education. As compared to children whose fathers had elementary school, those whose fathers' education was higher had much greater opportunity of attaining high school, community college, or regular college beyond compulsory education. Family influence on one's attainment of college is to everyone's attention, for which Table 1 presents eye-opening results: a child's opportunity to attain regular college is 100% higher ($e^{0.693}-1$) if father's education is at middle school level, 4.3 times higher ($e^{1.677}-1$) if father's education is at high school level, and 12.2 times higher ($e^{2.651}-1$) if father's education is at college level. Among fathers, those who have college education have the greatest effect on their children's educational attainment (magnitude of coefficient for college-educated father is largest in each column), and this effect is the most important for children's access to regular college (magnitude of the coefficient for college-educated father is largest in third column). There is no doubt that the higher the level of father's education, the greater the opportunity one has in attaining a higher level of education.

Second, father's political status also strongly affects children's educational attainment. This can be seen in two ways. On the one hand, compared to fathers who were not CCP members, those who are CCP members have the positive effect on the opportunity to attain a higher level of education beyond compulsory education: the opportunity will increase by 26% ($e^{0.232}-1$) for attaining high school, by 70% ($e^{0.528}-1$) for attaining community college, and by 80% ($e^{0.589}-1$) for attaining regular college. On the other hand, compared to children whose fathers were managerial elite, those whose fathers were professional elite or working class had fewer opportunities to attain a higher level of education beyond compulsory education, and this impact is greatest and most significant for attaining college education. Assume that a youth is given the opportunity of attaining college education by the value of 1 if the father is a managerial elite, then an otherwise comparable youth will have 49% of the opportunity if the father is a professional ($e^{-0.720}-1$), or 27% of the opportunity if the father is a working class ($e^{-1.326}-1$).

Third, father's work unit status has a significant effect on children's educational attainment. Although father's work sector makes no difference, the impact of father's work unit hierarchical level is evident. Compared to children whose fathers' work units were under the jurisdiction of the central government, those whose fathers' work units were under a lower level of government had fewer opportunities of attaining a higher level of education beyond compulsory education: this negative impact is getting bigger and bigger when the level of governmental jurisdiction is getting lower and lower, and the greatest negative impact comes to the work units which were not affiliated with any level of government.

Respondent's variables are also significant predictors of educational attainment. Male advantage is not existent in access to higher school, but it is significant in access to community college, and it is the most obvious and tremendous in access to regular college. Thus, gender inequality in access to higher education is evident. Compared to older cohorts who began working before 1980, younger cohorts increasingly enjoyed greater opportunities of attaining higher levels of education, and the large magnitudes

of the coefficients make it explicit that China's educational development was rather rapid from 1980 onward. Unfortunately, however, this progress was clearly unevenly distributed. Compared to respondents with rural *hukou*, those with urban *hukou* had 2.33 times ($e^{1.204}-1$) the chances of attaining high school, 5.77 times ($e^{1.913}-1$) the chances of attaining community college, and 27 times ($e^{3.332}-1$) the chances of attaining regular college. Moreover, compared to inland residents, coastal residents had significantly higher opportunities of attaining community or regular college.

Educational Attainment by Historical Periods

Were the effects of father's variables on educational attainment stable or changing across the periods of the reform era? Results in [Table 3](#) bring evidence in partial support of Hypothesis 2: father's education had significantly increasing effects on access to a higher level of education beyond compulsory education, and father's CCP membership had a general impact on educational attainment, but that impact was statistically insignificant in the most recent period. We describe the increasing effects of father's education in greater detail.

As shown in [Table 3](#) (first section), for attainment of high school education, the effect of father's education is all significant in all periods, and it is increasing in magnitude from the earlier period to the most recent period. This pattern of increasing father's educational effect is repeated in attainment of 3-year college (second section) and that of 4-year college (third section). The results in the third section are sharply impressive: compared to a youth whose father had an elementary school education, an otherwise comparable youth whose father had a college education will increase his/her opportunity of attaining a 4-year college by more than 12 times ($13.474-1$) in the pre-1979 period, by more than 9 times in the 1980–1992 period, by more than 13 times in the 1993–2001 period, and by more than 17 times in the post-2002 period. Inequality in access to higher education by family background was, by and large, significantly increasing from the pre-reform era to the post-WTO era.

[Table 3](#) also presents results about changing degrees of inequality in educational attainment by three ascriptive variables (gender, *hukou*, and region of residence). Gender inequality in access to high school education was not an issue until the post-2002 period, in which males had a 62% ($1.616-1$) advantage over females. In terms of attaining of community college education, gender inequality was significant in the pre-reform period, it was substantially reduced in the first two periods of reforms, but it made a huge comeback in the post-2002 period. We know that the policy of higher education expansion was implemented in 1999. This means that the first cohort of post-expansion graduates from 2- or 3-year community colleges started their job careers in the post-2002 period. Our results show that in this period females had significantly fewer opportunities to attend community college than males. Did the expansion policy help females to attend 4-year college programs? No. The last section of [Table 3](#) shows that from the pre-reform period to the post-2002 period, females had been consistently likely to receive 4-year college education than males, and the greatest gender gap

emerged in the most recent period, in which the post-expansion policy was in effect. It is safe to conclude that the post-1999 expansion of higher education increased, rather than decreased, gender inequality in access to college education.

Table 3. Exponential estimates of father's effects on education by period

Covariates	Pre-1979	1980–1992	1993–2001	Post-2002
High School				
Father Middle school	1.276	1.498*	2.091***	2.958***
Father High school	2.405***	1.456	2.369***	4.912***
Father College	3.973***	3.070**	2.277*	5.053*
Father CCP member	1.302	1.334	1.377	0.951
Gender (male = 1)	1.043	1.108	1.072	1.616*
Hukou (urban = 1)	3.420**	3.163***	4.242***	2.837***
Region (coastal = 1)	0.879	1.190	1.137	1.707*
3-year College				
Father Middle school	2.238***	1.923**	2.516***	3.648***
Father High school	3.434***	3.680***	3.776***	11.585***
Father College	7.945***	7.779***	5.899***	13.938***
Father CCP member	2.237***	1.637**	1.864**	1.107
Gender (male = 1)	1.748***	1.280	0.997	1.547*
Hukou (urban = 1)	—	5.513***	7.588***	5.361***
Region (coastal = 1)	1.279	1.625**	1.078*	1.773**
4-year College				
Father Middle school	1.646	2.308***	2.217**	2.361**
Father High school	6.109***	4.421***	5.244***	7.996***
Father College	13.474***	10.062***	14.240***	18.338***
Father CCP member	1.178	2.567***	1.729*	1.345
Gender (male = 1)	2.340***	1.960***	1.289*	2.538***
Hukou (urban = 1)	—	36.276***	88.145***	16.452***
Region (coastal = 1)	0.981	1.804***	2.046***	2.656***
N	2344	1955	1413	1335
Pseudo R ²	0.060	0.087	0.157	0.151
Likelihood	–2533	–2276	–1644	–1483

Include all control variables as in Table 2.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

—: There are too few respondents with rural hukou to estimate a reliable coefficient.

Educational inequality by *hukou* status has been persistent and rather severe. Starting in the pre-reform period, as compared to those with urban *hukou*, people with rural *hukou* were significantly likely to attend a higher level of education beyond the 9-year compulsory education in all period (there too few people with rural *hukou* to attend community or regular college education in the pre-reform period, a reliable estimate for inequality by *hukou* status was impossible). However, the expansion of higher education policy had significantly reduced the inequality by *hukou* status, as evidenced by the decreasing magnitudes of the *hukou* coefficients from the 1993–2001 period to the post-2002 period: the male advantage in access to community college education decreased from 7.588 to 5.361, and that for regular college education decreased from 88.145 to 16.452. The expansion policy opened up new channels for youths with a rural birthplace to receive college education.

But the inequality in access to college education by region of residence had steadily increased across all reform periods, and this is especially consistent for attainment of regular college education. Compared to those from inland areas, although the youths from coastal areas had an equal opportunity of attending regular colleges in the pre-reform period (the exponential coefficient = 0.981, close to an equal opportunity value of 1), but their opportunities increased by 80% ($[1.804-1] \times 100\%$) in the early-reform period, by 100% ($[2.046-1] \times 100\%$) in the later reform period, and by 165% ($[2.656-1] \times 100\%$) in the most recent reform period. Clearly, the expansion of higher education policy, which was implemented in 1999, disproportionately helped residents in coastal areas rather than inland areas. In this regard, the expansion policy increased, rather than decreased, an already huge gap between inland and coastal areas in educational opportunity.

Educational Effect on Career Placement and Mobility

Table 4 presents binary and multinomial regression coefficients about the effects of one's own education on one's career placement and mobility outcomes. Results are consistently supporting Hypothesis 3.

On occupational placement at job entry, one's education increases one's opportunity to be placed in a managerial elite category or a professional elite category, rather than in a working-class category. The general pattern is that the higher one's level of education, the greater opportunity one is to be placed in an elite category. On sector placement, the higher one's education, the greater the opportunity one is to be placed in a state sector than in a non-state sector. We will see if this was changing across periods shortly.

On career mobility, although one's education did not have a consistent impact on whether or not a person changed a position from the first job to the current job, among job changers their level of education clearly made a significant difference. Compared to someone with compulsory education, those with high school will increase their opportunity to move from a work-class position to a managerial or professional position by nearly 2 times (2.709-1), and this margin will increase

Table 4. Educational effect on career placement and mobility

	High school	3-year college	4-year college	Model information
Occupational Placement				N = 7029;
M-elite/working class	1.058***	1.999***	2.702***	Pseudo R^2 = 0.103;
P-elite/working class	0.891***	1.713***	2.626***	Likelihood = -5015.2
Sector Placement				N = 6840; pseudo
Non-state sector/state sector	0.499***	0.404***	0.286***	R^2 = 0.389;
				Likelihood = -2470.1
Occupational Mobility				N = 7020; Pseudo
Job change/no change	1.128	1.213*	0.967	R^2 = 0.034;
				Likelihood = -4673.9
Mode of Mobility				N = 3198;
Working Class to Elite	2.709***	9.740***	14.612***	Pseudo R^2 = 0.112;
Elite to Elite	4.907***	21.027***	72.526***	Likelihood = -3761.8
Elite to Working Class	2.601***	5.566***	8.499***	

Include all controlled variables as in Table 2.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

several times for those with a level of college education. Given the large magnitudes of the coefficients for elite to elite mobility, one's education is exceedingly important for one's mobility between managerial and professional elite categories. One's education is also a significant factor of one's mobility from an elite position to a working-class position; during the reform era this type of mobility has been directed by a desire to move into a high-salary position in the non-state sector.

Educational Effect on Career Mobility Outcomes by Period

In testing Hypothesis 4 about the increasing effects of education on career mobility across the years, we obtained the results of Table 5. Here, our interest is in the changing educational effects during the three reform periods, and we pay special attention to the increasing effects of college education across the three periods.

The first section of Table 5 shows that in each reform period, the higher one's education, the higher the probability one moves from a working-class position to an elite position (thereafter "upward mobility"). This confirms the general pattern revealed by the results presented in the previous section. Comparing the magnitudes of the coefficients of three levels of education, one can see that the impact of high school education on upward mobility did not change across the three reform periods, the impact of community college education fluctuates across the three periods, and the impact of

EDUCATION AND CAREER MOBILITY UNDER CHINA'S MARKET ECONOMY

Table 5. Educational effects on mobility outcomes by period

<i>Education categories</i>	<i>Total</i>	<i>Pre-1979</i>	<i>1980–92</i>	<i>1993–2001</i>	<i>Post-2002</i>
<i>Working-to-Elite vs. Working-to-Working</i>					
High school	2.484***	6.348***	2.211*	2.292*	2.694***
2- or 3-year college	8.976***	16.625**	11.041***	7.987***	9.375***
4-year college	13.310***	26.529**	6.912***	11.036***	14.879***
<i>Elite-to-Elite vs. Working-to-Working</i>					
High school	4.980***	7.466***	5.180***	5.013**	6.905***
2- or 3-year college	22.400***	21.117**	41.381***	21.616***	31.380***
4-year college	82.005***	117.155***	50.890***	103.810***	120.529***
<i>N</i>	3151	202	510	682	1757
Pseudo <i>R</i> ²	0.114	0.135	0.125	0.116	0.110
L1	-3181	-196	-531	-682	-1752

Include all control variables as in Table 2. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

college education was steadily increasing from the early reform period to the most recent, post-2002 period. The last result is strong evidence in support of Hypothesis 4.

Elite-to-elite mobility is an important form of career change and career advancement. Expectedly, a move from a professional position to a managerial position entails an increase in power or authority over the labour of others, and a move from a managerial position to a professional position implies an increase in skill appreciation during market reforms. The “market transition debate” literature makes it explicit that income returns to education and professional skill steadily increased across the years of reforms (Bian, 2002; Lister & Borelli, 2012). The second section of Table 5 shows an impressive set of results about the increasing effects of 4-year college education on elite-to-elite mobility from the early reform period to the most recent period. This adds another strong support of Hypothesis 4.

CONCLUSION AND DISCUSSION

On the two issues we examined in this chapter, we have obtained strong empirical findings from the 2009 JSNet survey, which lead to the following conclusions and discussions.

Decreasing or Increasing Inequality in Educational Attainment?

On this issue, we have focused on the extent to which family background affects access to post-compulsory education. Among a number of variables we used to

measure family background, father's education turns out to be the most important: Not only did it significantly affect children's attainment of all levels of post-compulsory education in all periods, its effects also steadily increased across the periods, and this effect was the greatest after the expansion of higher education policy was implemented in 1999. With these findings in mind, we draw our first conclusion: Market reforms have not reduced educational inequality by family background, and the expansion of higher education policy may indeed have increased, rather than decreased, the inequality by family background.

This conclusion is supported by findings about the persistent, and in most instances increasing, inequalities in access to regular college education by gender, *hukou*, and region of residence across all periods under study. Regular college education draws the attention of a great majority of Chinese families; for most youths, as well as their devoted parents and grandparents, attending a nationally prestigious university is a dream to come true. But unfortunately, our study did not bring us positive results. Gender gap in access to regular college education was significant in the pre-reform period, it narrowed in the early reform and later reform periods, but it substantially enlarged in the post-expansion of higher education era. *Hukou* gap in access to regular college education has been tremendously sizable across all three reform periods, although it substantially reduced after the expansion policy was implemented. But regional gap in access to regular college education has steadily enlarged, and it was the largest in the post-expansion era. Altogether, the ascriptive dimensions of inequality in educational opportunity have become increasingly significant along the market reforms, and they were a more serious problem after the 1999 expansion of higher education.

This is depressing news and raises alarm to educational researchers, practitioners, and policy makers. For a long time, many of these people have thought that inequality in educational attainment would be gradually reduced in an expanding economy, in which the steady growth of economic resources and the resulting expansion of post-compulsory education at all levels would benefit the poor or otherwise disadvantageous classes (Nee, 1989). This assumption has made a few researchers excited when they found signals of reduced inequality in the early reform periods (see a review by Bian [2002]). Our study has made it explicitly clear that market reforms and the expansion of higher education policy would not by themselves meet the goal of equalizing educational opportunity. It requires both a deliberate design and forceful implementation for any educational policy to be effective in reducing ascription-based inequalities in educational attainment. Such a design seems to be outlined in a 2012 Central Government's initiative "Special Admission Program for Children in Poverty Regions."⁶ This initiative is aimed at increasing admissions to prestigious universities for children from the poor regions in middle and western China. While we wait and see how this initiative is implemented, we remind policy makers and practitioners to look into social mechanisms that maintain and perpetuate educational inequalities at all levels. Understanding and reconfiguring these mechanisms is an important task to be carried out before any policy can help change social realities.

Increasing or Decreasing Educational Impact on Careers?

On this second issue, we can draw a more positive conclusion. While education increased an individual's opportunity to get a good placement at job entry even before market reforms, this positive impact of education became much stronger after the reforms. Moreover, higher education has been a significant promoting factor of career mobility: one's opportunity for upward mobility from a working class position to a professional or managerial elite position is increasingly boosted by one's college education from the early reform period to the most recent period, and the same is true for elite-to-elite mobility. From these findings, we conclude that China's market reforms and the expansion of higher education policy have enriched and increased the values of education, especially college education, in the increasingly marketized Chinese economy.

The implication of this conclusion must be carefully evaluated. On the one hand, it is good news for all of us when education becomes increasingly valuable as highly educated individuals are increasingly placed at positions of skill and power. This is a signal that China finally is on the road toward modernization: increasing the education of all citizens is a central mechanism through which human resources can be allocated efficiently, individuals can become modern, and societies can transform away from anti-democracy forces. On the other hand, however, the increasing value of education in China has been coupled with a parallel process in which educational inequalities by ascriptive criteria, such as gender, *hukou*, region of residence, and family class background, all have increased for the past 35 years. This means that the increasing labour market values of college education, for example, has actually legitimized and perpetuated the ascription-generated inequalities embedded in educational processes. This implies that the economic ideal for labour market efficiency would work reversely against the social ideal for educational equality. Thus, the ultimate message from this study is that China must necessarily work hard to reduce and eliminate the social forces that cause inequality in educational opportunity.

NOTES

- ¹ This strategy originated from an important speech made by Xiaoping Deng at "Forum on National Science and Education Work" in 1977, which brought about the restoration of the college entrance examination system that fundamentally changed thousands of people's destinies. Therefore, it might be said that the success of education reform was a landmark in China's reform history.
- ² Data source: *Statistical Communiqué on Education Development in 2012*, from official website of the Ministry of Education of China, 2013-8-10, http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe_633/201308/155798.html.
- ³ Su Wang: "Report on China's Education Competitiveness: The Fastest Increasing Speed in the World", *China Education Daily*, 2009-11-27.
- ⁴ Yongping Zhao: "Why Rural Students are Unwilling to Enter College", *People Daily*, 2013-5-26; Xinhua Agency: "The Back Tide of 'Education is Useless' Stirs up the Reflection of Higher Education Equality", 2013-9-5, http://news.xinhuanet.com/edu/2013-09/05/c_117245240.htm?

- ⁵ Li Keqiang: “Focus on Education Equality, Promoting Science and Technology Innovation”, 2013-8-31, from Xinhua Agency, http://news.xinhuanet.com/politics/2013-08/31/c_117173898.htm
- ⁶ For more detailed information about this project, please see: http://www.gov.cn/zwqk/2012-04/23/content_2119933.htm

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EDUCATION AND CAREER MOBILITY UNDER CHINA'S MARKET ECONOMY

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