Parental Configurations, Household Resources and High School Enrollment: An Analysis of China's 2000 Census*

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Abstract

Using the 0.95‰ sample of China's 2000 census, this paper investigates the relationship between parental configurations (defined as family type and living arrangements in relation to parents) and high school enrollment among adolescents ages 17-18. Analytic results show that children from two-parent families but living only with the mother are the most advantaged in school enrollment, while adolescents from divorced families, widowed families, stepfamilies, and no-parent families all have a lower likelihood of enrollment than children living with two parents, particularly so for those from single-father and widowed-mother families. These findings reflect that parental configurations remain an important determinant of adolescents' education beyond the compulsory level in contemporary China, partly due to household resources. Such findings are partly inconsistent with those of relevant studies in developed and developing settings. Since high school education plays an important role for individual socioeconomic mobility in Chinese society, the disadvantages faced by children of single-father and widowed mother families are likely to have detrimental and long-term consequences for children, the family and society.

[Keywords] Parental Configurations, Family Type; Living Arrangements; Household Resources; High School Enrollment; China

Introduction

Education is the engine of social mobility across space and over time (e.g., Deng and Treiman 1997; Treiman and Yip 1989); high school education is the highest level of basic education and the link between compulsory and college education in China. It occupies a unique position in the improvement of "population quality" at the macro level, and is important for human capital accumulation and career development at the individual level. Accessibility of high school education can either function as a hindrance or a promoter for individual upward social mobility.

The past 20 years have witnessed tremendous enhancements in high school education in China, as indicated by gross and net enrollment rates. Compared with other levels of education, however, the improvements to high school education lag behind; approximately half of middle school graduates are unable to proceed to high school (RGEHEC 2005). In large cities, it might be more difficult to enter a well-recognized high school than to enter a college. Such interesting phenomena present several unavoidable questions: who goes to high school in a context with various constraints yet rapid expansion of formal education? Why are some individuals able to break through these constraints and exploit high school opportunities, while others do not? What factors affect the likelihood of high school enrollment?

The unequal access to high school education among youths has been attributed to multiple factors. In addition to individual characteristics such as ethnicity (Hannum 2002), gender (e.g., Hannum and Xie 1994; Song, Appleton and Knight 2006; Zheng and Lian 2004), number of siblings (Yang 2007a, 2008a) and parental SES (e.g., Yang 2007a,

2008b), macro-level factors have been extensively explored. These include the inadequate allocation of public funding to high school education (Song and Lan 2006), unequal distribution of public investment between urban areas and the countryside and across regions (Guang 2003; Yang 2005), low returns to high school education, particularly for children in rural areas (Yuan and Qin 2003; Zhang and Hao 2006), and the current education system (e.g., intense competition for high school entrance). There is a consensus that macro-level constraints have hindered the attainment of high school education (Guang 2003; Yang 2005).

Macro-level constraints are shared by all youths in the same setting. Within each context, however, some adolescents are able to obtain high school educations, while others do not. It is thus clear that other factors also play a role in the educational opportunities for youths. Since the family is the primary arena of adolescents' daily life, parental configurations and household resources would surely affect their educational wellbeing. This paper is interested in the role parental configurations play in facilitating or constraining adolescents' high school educational opportunities, net of other factors.

Family organization has undergone substantial change (e.g., Wang 2006) along with socioeconomic and demographic transitions. The unprecedented wave of rural-urban migration has reshaped children's living arrangements, and the rising rate of marital dissolution has contributed to a higher proportion of single-parent families (Ye and Lin 1998; Ye and Xu 2002), both of which may bear a relationship to the education outcomes of adolescents. Nevertheless, while the relationship of parental configurations to children's education has received tremendous research interest outside of China, it has not received

much attention in academia and among policy makers inside of China. In various settings different parental configurations are found to have divergent effects on child education, but it is not clear whether or not they are related in China. Moreover, patterns held in other countries may not be applicable to the Chinese context due to its unique economic, social and policy context. For example, unlike the west and some less developed countries, China provides no public assistance for the education of children living with a single parent or neither parent, and there are more sources of change in parental configurations in China compared with the west.

Using the 0.95‰ micro data sample of China's 2000 Census, and focusing on adolescents ages 17-18, this paper examines the relationship between parental configurations, defined as family type and living arrangements of children in relation to parents in this paper, and high school enrollment. It addresses three interrelated issues by exploring a broad range of factors at the household and individual levels associated with adolescent schooling in an era of socioeconomic transformation and expansion of formal education. Are parental configurations related to adolescent high school enrollment? Which dimension (i.e., family type or living arrangements) of parental configurations is related to high school enrollment? Are the patterns to be found in China similar to those in the West and other developing settings and what might be reasons for possible similarities and disparities?

This paper contributes to existing studies in three ways. First, it addresses inadequacies in the study of the relationship between parental configurations and high school education in China. Considerable attention has been devoted to the implications of

macro-level constraints and parental SES for high school education; much less attention has been paid to parental configurations (for an exception see Connelly and Zheng 2003, 2007). My paper connects the two by exploring how the patterns and characteristics of family type and living arrangements are linked to adolescent education.

Second, this paper analyzes data from the most recent census with sufficient, representative cases. This analytic advantage is significant; although a myriad of studies have been written on child education in China, existing studies tend to use small-scale, unrepresentative data or qualitative data; few have been able to draw on large samples. The large sample size and detailed information on parental configurations enable me to differentiate various family types and living arrangements within each type, and to explore the relationship between parental configurations and adolescent education to the fullest extent. To be fair, the census data have been used for describing the trends, patterns, and characteristics of child education (e.g., Connelly and Zheng 2003, 2007; Duan 2006; Zheng and Lian 2004). To my knowledge, there is so far no study inside or outside of China that employs census data to study the net relationship between parental configurations and high school enrollment, although Connelly and Zheng (2003, 2007) used the data to explore the determinants of education among children 10-18 years of age.

Third, analysis in the U.S. and elsewhere has indicated that each dimension of parental configurations may be linked to offspring education, but the patterns of effect differ in various settings. It will be instructive to examine whether some of the same patterns and associations that characterize the U.S. (see Amato 2000 for review) and other societies (Lloyd and Blanc 1996; Pong 1996; Stash and Hannum 2001) hold in a very

different cultural context. China presents an interesting case for analysis in this area because it has been undergoing dramatic family change and rapid expansion of public education. As of yet, unlike the west, changes in living arrangements in China come from more sources than just marital dissolution. The analytical results of this paper will have implications for future trends regarding adolescent education outcomes in different family context; it will also provide suggestions for the applications of conceptual frameworks developed in western settings.

Background

Expansion of public education and current status of high school enrollment

China has undergone dramatic socioeconomic transformation, population transition, family change, and rapid expansion of public education in the past 30 years, and children's education opportunity is embedded in such broad and household settings. The Compulsory Education Law (CEL) was initiated in 1986, which requires all children after age 6, regardless of sex and ethnicity, to complete a nine-year basic (or compulsory) education, which contains six years of primary school and three years of middle school education. College enrollment has also expanded tremendously since the mid-1990s. High school is beyond the basic education and merit-based, and parents must rely on their own resources to send children to school, demanding more household monetary resources than lower levels of schooling.[1] Meanwhile, according to the Labor Law, children in high-school

[1] All high schools require tuition. Basic education also required tuition prior to 2006, and college education costs more. However, the cost of basic education was supposedly low, and in college, students have ways (e.g., fellowships, part-time jobs) to reduce the costs, and the returns to college education are much higher than for the high school diploma. Also, the opportunity costs are higher for rural than for urban families because rural students may find a job in urban areas if they stop schooling, and if they continue going to

ages can be lawfully employed, and there are well-developed labor markets for them. Hence, while many more children go to high school than did in the past, the improvement of high school enrollment is slow relative to other levels of education. Figure 1 depicts the conditional enrollment rates of middle school, high school and college, among primary school graduates, middle school graduates, and high school graduates in 1994 and 2004, respectively. Clearly, both the conditional enrollment rate of high school and the rate of increase are the lowest among the three transitions, painting a picture of high school education lagging behind in China's educational system (Guang 2003).

(Figure 1 about here)

Sources of changing family types and living arrangements

While the relatively slow improvements to high school education at the aggregate level can be attributed to education and labor policies experienced by all children, variations among children with regard to access to high school relate to a more complicated web of factors, including family type and living arrangements. The restrictive birth planning policy, large-scale labor migration due to the relaxation of the *hu kou* (registration) system, changing ideologies towards the family, and the rising divorce rate have jointly reshaped family structure: its size, type, living arrangements and sibling configuration. For example, many parent(s) have left hometowns for urban areas for better economic opportunities. This has changed family living arrangements because some family members are left behind at the place of origin and other family members migrate

school, most have to stay in school dormitories while the majority of urban children stay at home since most high schools are located in cities. Nevertheless, school costs and accessibility may not be prohibitive since most parents would do their best to send children to school due to the importance of high school education to upward social mobility – it is perhaps the only way for rural children to become (desired) urban citizens.

out,, creating a new family type in China – left-behind family. There are multiple kinds of left-behind family, and the most common one is those with the mother and children at the place of origin (due to the out-migration of the father). It has been estimated that left-behind families account for some 20 percent of China's families in 2000 (Zhou 2006:18). As a subtype of the two-parent family, the huge number of left-behind family makes it particularly relevant to the wellbeing of individuals, the family and society. In particular, different family living arrangements of children will have implications for their education.

The rising divorce rate has also contributed to changes in family types and living arrangements. The gross divorce rate rose from 0.35‰ in 1980 to 0.70‰ in 1990 (MoCA 1993), and to 0.96‰ in 2000 (NSB 2001). In 1999, over 1.2 million couples experienced divorce, three times the number in 1980 (NSB 2001). This has increased the proportion and absolute number of single-parent families. Moreover, while China's divorce rate remains low (UN 1999) compared with that of other countries, given its population size, even a low rate still involves in a huge number of families and individuals. According to China's Marriage Law, the divorced parent with better capacity to care for the children will take custody of the children. However, the reality is more complicated than the regulation. For example, since a divorced mother with custody of her child may experience more difficulty in getting remarried, she may not want the custody of the child, regardless her of capacity for childrearing. However, if the mother has custody, she is likely to take care of the child herself; conversely, a divorced father who has child custody may simply leave the child to the care of grandparents.

It is possible that different family types and living arrangements would yield diverse effects on adolescent education since the family is the primary arena of their daily lives. However, the absence of relevant studies in the Chinese context prevents us from a better understanding of their relationship. Relevant studies in other settings, particularly in the US and other developed countries, might be informative and instructive to China, although findings in other countries may not necessarily be applicable to China due to its unique socioeconomic characteristics and diverse sources of changes in parental configurations.

Conceptual framework of parental configurations and child education

In explaining educational variation among children, sociologists and economists in the west have proposed that parental configurations affect child wellbeing by influencing the fulfillment of family functions – in economic support, and in the ways in which families can provide emotional support and care for their children (McLanahan and Sandefur 1994). The family also acts as a conduit to dispense valuable resources (e.g., household wealth and parental time) to children (Becker 1991). The amount of resources that can be allocated to any given child and the way household resources are distributed depends upon the amount of family resources available and parental configurations. Because the father and the mother provide complementary resources (e.g., the provision of household services by one parent and economic resources by the other), children of two-parent family will benefit more relative to children of other family types (Becker 1991). Conversely, children of single-parent families are disadvantaged and on average do less well in school, since the single parent can hardly successfully play both the provider role of household service and of economic resources simultaneously. This might be especially

true for children from single-mother families because it is economically most disadvantaged: the income of single-mother families is on average less than a third the income of two-parent families and about half the income of alternative father-headed families (Garasky and Meyer 1996). In addition to financial constraints, parental guidance is also diluted in single-parent families and stepfamilies, negatively affecting child outcomes. These arguments are largely supported by empirical studies in the US (Thomson et al. 1994), although findings of the effect of single-parent families on offspring's education are mixed (for a review see Amato 2000) due to various intervening factors, including public policy favorable for the family (Pong et al. 2003).

What do we expect for a population beyond compulsory school age in a context where universal access and affordability is not guaranteed, but parental configurations have been greatly reshaped due to the aforementioned factors? To answer this question, it is necessary to (1) situate the relationship between parental configurations and child education in their unique settings, (2) consider simultaneously the family type and living arrangements, and (3) identify the sources of living arrangements within each family type. It is possible that the argument that children of single-parent families, particularly single-mother families, are disadvantaged in education is true only when single-parent families results from divorce, separation or out-of-wedlock childbearing. When the source of single-parent families is unrelated to marital dissolution, children of such families may not be necessarily disadvantaged. Indeed, parallel studies in developing countries, such as Nepal (Stash and Hannum 2001), Sub-Saharan African countries (Lloyd and Blanc 1996) and Malaysia (Pong 1996), do not duplicate the major patterns found in the west since

single-parent families are largely the outcome of the death of one parent.

China presents a unique case in family type and living arrangements, and the sources of current residential patterns. First, a two-parent family does not necessarily imply co-residence of children with both parents; it is possible that the child lives only with the father or the mother, or with neither parent. In other words, a single-parent family is in fact a two-parent family, although parent(s) and children may not co-reside. Second, the source of such a family is more diversified than that in the west and other developing settings. While divorce and widowhood contribute to the formation of single-parent families, migration is perhaps the most important source of such family types in China, as discussed above. Different sources of family type and living arrangements would be linked to diverse household resources, parental expectations for children and investment in child high school education. While divorced families and stepfamilies with diluted available financial and non-economic resources may incur disadvantage for child education, the absence of a parent due to migration may not. Conversely, the economic resources of two-parent families with parental migration might possibly improve since parent(s) may obtain better occupational opportunities at the place of destination, enhancing their capacity to invest in child education financially and compensate for potentially diluted non-monetary resources (e.g., parental guidance[2]). As the 2000 census data suggests, over

[2] However, the importance of parental guidance varies by the dimensions of child wellbeing: it might be more important for child behavior and emotional health than for education. Also, if children spend most of the daytime at school, the demand for parental guidance might be low. This is precisely the case in China: currently, most high school students and some middle school students live in school dormitories and go home on weekends and holidays. Additionally, we should also consider the degree of parental participation in child education. If a parent are not frequently involved in children's schooling, as is the case in rural China, parental absence will not necessarily dilute family non-economic resources.

half of parents migrate for the purpose of making money,[3] and children's education is a priority on which to spend earnings (Bai and Song 2002). Hence,

H1. Children from two-parent families are expected to be more likely to attend high school than their peers from other family types, regardless of living arrangements.

Within each family type, the residential pattern of children in relation to parents and the source of such patterns also matters. In Sub-Saharan African countries (Lloyd and Blanc 1996) and Malaysia (Pong 1996), for example, children of mother-headed households are advantaged when the mother-child family results from the death of the father, but disadvantaged when the mother-child family results from divorce. The story remains a mundane economic one, since widowed mothers can get support from kinship networks, while divorced mother cannot in contexts with a collective culture (Pong 1996). Even in the US, the findings on education of children in single-parent households are mixed (Amato 2000; Pong et al. 2003). In China, in addition to divorce and widowhood, the absence of one parent largely results from migration to pursue better economic opportunities. Traditional gender roles and market constraints allow the father to find better jobs and earn higher incomes than the mother; hence, the economic condition of left-behind family with the mother's presence might improve; meanwhile, mothers tend to take better care of children emotionally and in daily life than fathers. Both combined, family function can be maximized. Conversely, if the mother migrates out and the father stays, traditional gender roles reverse: the father is in charge of household tasks, while the

3 Among those currently married with a rural registration and older than 30 years of age, about 55 percent migrate for work; some 10, 14 and 11 percent migrate due to housing relocation, and family reunion, visiting relatives, respectively, and the rest move for unidentified reasons.

mother takes on the breadwinner role. Gender ideologies of the private sphere and market place prevent her from finding a decent job, and prevent him from managing household tasks well and providing necessary behavioral guidance and emotional support for children, diluting both economic and non-economic resources of the family, and thereby yielding an adverse impact on child education. Additionally, a stay-at-home father might be satisfied with the status quo and/or give up hopes for himself and his children. It is also possible that he is disabled or in some extreme situation, which prevents him from migrating out for better economic chances. This line of thinking, together with findings of existing studies, leads to the second hypothesis:

H2: Children of two-parent families who live only with the mother are expected to be better off than their peers who live only with the father, while children living with only the mother due to other reasons might be disadvantaged.

Data and Method

This paper uses the 0.95‰ micro data sample extracted from China's 2000 census, issued by the National Statistics Bureau of China, to describe, compare, and analyze the high school opportunities of adolescents in different family contexts, and test the above hypotheses.[4] The census data, with large sample size, national representativeness and diverse household contexts, is the most suitable available data source for the analysis of the relationship between parental configurations and high school opportunity. There are

[4] It might be important to compare the relationship of parental configurations to compulsory education and post-middle school education. The primary reason for this paper to only examine high school attendance is that high school is particularly important to social mobility in contemporary China given that the majority of children supposedly have at least a middle school education.

liabilities to using the census data, however. First, it employs a *de facto* enumeration rule, which includes in each household only those persons present on census day. It is possible that the *de facto* rule produces lower estimates of co-residence between parents and children. Second, as cross-sectional data, it provides no clear causal inference for parental configurations and high school enrollment. For example, we do not know when children stopped schooling; not enrolling children in school might happen prior to changes of parental marriage or migration. Third, the census data has limited information: among others factors, contextual factors (e.g., accessibility of school) and costs of schooling for all children and parental information for children not living with parents are absent from the census data. These are important factors (Bray 1996; Lloyd 1994; Pong 1997), especially given the highly uneven expansion of secondary education in rural vs. urban settings. Data limits constrain our capacity to make causal inference on the effect of parental configurations on child education, but they should not prevent us from assessing their associations and the census data remain the most appropriate source for doing so in China, despite all these liabilities. More importantly, I expect that the effect of missing variables on high school education is largely additive and that they do not interact with the key predictors to such an extent that they would change the basic patterns emerging from this analysis.

The sample includes adolescents ages 17-18. Because this paper is interested in who goes to high school among middle school graduates and the role that family type and living arrangements play, the sample is conditional on youths who have graduated from middle school since children without a middle school diploma can hardly have the

opportunity to enter into high school, but includes those who have graduated from high school because they have had the opportunity to access to high school.

Variables

The dependent variable of this paper is the likelihood of enrollment. If a sampled child ages 17 or 18 attended school in 2000, he/she is defined as being enrolled.

The key predictor is parental configuration, measured as family type and living arrangements. To test hypothesis 1, I differentiate the family of the sampled children into five types based on parental marital status: two-parent family, stepfamily, widowed family, divorced family, and no-parent family. To test hypothesis 2, I consider family type and living arrangements simultaneously by constructing a group of composite measures: children of two-parent family are classified as living with both parents, only with the father or only with the mother based on living arrangements and inferred migration information at the household level.[5] Methodological caveats, such as endogeneity, are inherent in the census data. For example, the decision of the father to migrate is quite likely related to his child's education. High school is expensive, particularly for rural residents. If one's child is doing well in middle school and shows promise in terms of educational success, rural parents need to find tuition money. In this way, the causality is very likely to go from the child's enrollment to a missing father rather than in the other

[5] Uncertainty emerges with parental migration status: there is no such direct information in the census data. Instead, we infer it using information on the number and sex of out-migrants in household for those currently married. If the household has only one middle-aged, married couple and one migrant, no problem is anticipated for such inference; if the household has more than one couple and more than one migrant in similar age and same sex with same child configurations, it is difficult to identify whether it is the parent(s) of the sampled children who migrate out. Some 20 cases are excluded from the sample for we are unable to make a judgment based on all available information. For the sample included in this paper, I am confident that two-parent family but with only one parent presence emerges largely from migration of one parent. Abandonment, as some may suggest, is rare, although China is conservative with low acceptance of divorce.

direction — that is, living with only the mother could be the result of continuing in high school. The potential reverse causation problem is serious; while a instrumental variable technique would help solve it, the census data does not provide needed information. Also, I can only observe current living arrangements. Since migration is largely temporary, many of the rural youth currently living with just their mother spent most of their youth with both parents, and similarly, youth living with both parents now may have spent a significant amount of time in the past living with one or neither of their parents. However, these problems should not prevent us from exploring the relationship between parental configurations and child education. If father's migration enables children to enroll in school, regardless of the motivation, migration remains an important facilitator of high school opportunity, even if it is not the cause. In other words, without father's migration, children may not be able to enroll in high school.

For other types of family, while it will be desirable to identify whether children of stepfamilies stay with the stepfather or stepmother, there is no available information on biological or step parents. Children of widowed families are differentiated as living with the widowed father or mother. Similarly, children of divorced families are identified as residing in single-father and single-mother families.[6] No-parent families refer to children living without parents, which can be due to migration or death of two parents, or migration of the children for work or schooling. However, there is no parental data for these children,

[6] Because some types of family have limited sample sizes, specifying living arrangements for nontraditional forms of families in this way may generate a small N problem. However, while collapsing some categories together would generate a more sizeable sub-sample of some types of family, it does not allow for assessment of the potentially different association between the father and the mother, and enrollment. While the size of some categories of the family variable is small, it is sufficiently large to make such distinction as we shall see below. Hence, to keep maximum information, we treat them as independent categories.

preventing us from ascertaining the true reasons of parental absence.

To investigate the net effect of parental configurations on child schooling, this paper controls for child age (measured as age 17), sex (gauged as girl), Han ethnicity (in comparison to minority children), and sibship composition. Studies have found that high school education is conditional on age, and an older age is associated with a lower enrollment rate (Yang 2007a); girls' educational enrollment is lower than boys' (Buchmann 2000; Greenhalgh 1985; Jejeebhoy 1993; Lloyd 1993; Sathar 1994; Zheng and Lian 2004); minority children are disadvantaged in education compared to Han children (Hannum 2002). Sibship composition affects siblings' educational opportunity because they compete for household educational resources (e.g., Blake 1981; Powell and Steelman 1990; Steelman et al. 2002; Yang 2008). It is operationalized as composite measures of sibsize, sibling gender, and sibling order: single children, 1 sibling, 2 siblings, and 3+ siblings; for those with 1 sibling, they are further differentiated as having 1 older brother, 1 younger brother, 1 older sister, and 1 younger sister; for those with 2 siblings, I classify them as having at least 1 brother or 2 sisters.

This paper also holds constant parental education and occupation, and family economic condition.[7] Parental education and occupation are based on the father's; when father's education and occupation are missing, I replace them with mother's education and occupation. Education is gauged by illiteracy, primary school, middle school and high school+ completion; occupation is measured as farmer, ordinary worker, service person,

[7] Studies on family background and child education have also suggested the importance of grandparents (Connelly and Zheng 2003; Short 2008, personal talk). This paper does not take it into account because the role of grandparents in grandchildren's schooling is more relevant to lower levels of education than to high school.

and administrator and professional. Child education is also affected by household economic conditions, which is gauged by an index created using factor analysis with items of the availability of running water and hot water, housing size, building materials, cooking materials, etc, due to the lack of income information in the census data. Then, using mean as the cutoff point, households are dichotomized as having an economic status better than average or worse than average. Controlling for household economic conditions is important because the intersection of income and parental configurations is very important for child outcomes (Short 2008, personal correspondence).

Additionally, contextual factors, urban residence and administrative region, are also controlled for to eliminate the potential confounding effect of contextual and regional disparities on the relationship between parental configurations and high school enrollment. The urban-rural gap in high school education is the largest across all levels of schooling, and urban residence remains one of the most important determinants of high school education differentials among youths (e.g., Song and Lan 2006; Yang 2007a). Also, an interaction between urban residence and children's sex (measured as a girl) is created to simultaneously examine the effect of urban and girl on education. Finally, region is gauged as seven administrative regions (North center, Northeast, East, Center, South, Southwest, and Northwest) and one municipality (including Beijing, Tianjin and Shanghai). All variables used in this analysis are operationalized as dummies, as shown in Table 1.

Analytic strategies

The analysis of this paper proceeds in two steps. First, to test hypothesis 1, it focuses

on family type. The model only contains family type and control variables, exploring whether children's high school opportunity differs by family type, net of other factors. Second, to test hypothesis 2, the analysis expands to include both family type and living arrangements, as well as control variables. This would allow us to explore the association of parental configurations with offspring's schooling to a greater depth. For each test, three models are fitted, respectively, by using a stepwise procedure, which assesses the potential mediating effects of a child's personal, household and contextual factors on the key relationships. In the baseline equation of each test, only family type (and living arrangements) variables and urban residence are included, which tests whether variations in parental configurations are significantly associated with children's education. Since adolescents who do not co-reside with parents have no parental information, they will automatically drop out from the equation if they are entered into the same equation with parental variables. So, the second model includes all variables but parental information to compare their likelihood of high school enrollment with that of other children, net of other factors except for parental SES. Finally, I add parental education and occupation to the equation to explore the net relationship of family type and living arrangements with high school enrollment. Since the outcome variable is measured dichotomously, binary models are appropriate for the data structure and the dependent variable. Robust standard error calculation is applied to address the issue of clustering within administrative district, which is the closest cluster to children's life available in the census data.

Analytic results

Descriptive analysis

Table 1 presents the definition and univariate statistics of variables, together with the sample size of each variable, used in this analysis. As reflected in the census data, high school enrollment is 40 percent among those ages 17 and 18 in 2000, 11 percentage-points lower than that in Figure 1.[8] Some 86 percent of families are two-parent families, although not all children in such families co-reside with both parents. Stepfamilies, widowed families, divorced families and no-parent families account for 3.5 percent, 3.1 percent, slightly lower than 2 percent, and about 6 percent,[9] respectively. Within two-parent families, widowed families, and divorced families, children's living arrangements differ. These figures suggest that variations in parental configurations in China is low relative to the US, and the proportion of father-only families, whether it is due to widowhood, divorce or another reason, is particularly low in the sample. However, it is still important to distinguish father-only families from other families based on the theory presented above. As we shall see below, it is the children from such families who are most disadvantaged in education. Since the sample size is large, there are still sufficient cases to make such a distinction.

(Table 1 about here)

Table 2a describes high school enrollment rate by family type only, and by both type and living arrangements in 2000. When only family type is considered, surprisingly,

[8] The gap may come from multiple sources. For example, Figure 1 represents the rate of enrollments among middle school graduates who have ever enrolled in high school, while Table 1 reflects the current enrollment rate. Children who entered high school may not necessarily remain in school. Also, different data may contribute to this disparity.

[9] Among children living without parents, 28 percent are the household head; 17 percent live with grandparents; 15 percent live with sibling(s), and the rest 40 percent live with other people, which could include students in school dormitories and those in other collective dormitories.

children from divorced families and children who do not co-reside with parents have the highest rate of enrollment, 43 and 42 percent, respectively, while the rate of enrollment among children of widowed families is the lowest (27 percent), followed by those in stepfamilies (34 percent). With a 40-percent enrollment rate, children from two-parent families are not advantaged in terms of high school opportunity. When both family type and living arrangements are considered, however, a more interesting picture emerges: while children of widowed-mother families have the lowest rate of enrollment (21 percent), which contradicts to relevant findings in other developing countries, children of two-parent families who only co-reside with the mother have the highest rate of enrollment (53 percent). More intriguingly, the rate of enrollment is the second highest in single-mother families (51 percent), contradicting to findings of the relevant studies in the west. Overall, children co-residing with the father are more disadvantaged than their peers living with the mother, regardless of family types except for widowed families.

(Table 2a about here)

The bivariate association based on the census data clearly indicates a connection between various dimensions of parental configurations and adolescent school enrollment. However, this relationship may be confounded by other factors since the outcome variable is also highly correlated to control variables. Table 2b is the cross-tabulation between control variables and the rate of enrollment. Most of the findings are as expected, but an intriguing pattern is also detected: children's sex is not significantly associated with enrollment rate, and boys and girls have similar high school enrollment rates.

(Table 2b about here)

Model results

To explore the net association between family type and living arrangements, and high school opportunity, I now estimate a series of regression models, controlling for child characteristics, parental education and occupation, and household wealth, as well as urban residence and region. Table 3 presents model results for the test of hypothesis 1, while Table 4 presents model results for the test of hypothesis 2.

Model 1a in Table 3 investigates the relationship between family type and enrollment, controlling for urban-rural stratification. Obviously, net of urban residence, children in stepfamilies, divorced families, and widowed families are disadvantaged in high school enrollment compared to their peers in two-parent families. However, there is no significant difference between children of two-parent families and children in no-parent families. The patterns detected in Model 1a largely hold in Model 1b, when all individual, household and contextual variables are included in the equation except for parental information. This model is fitted because we would like to know the correlates of school opportunity for all children, including those who live without parents and therefore have no parental information in the census data. Results show that the size of coefficients for stepfamilies and widowed families slightly attenuates, while it substantially strengthens for divorced families and no-parent families. Hence, in this model, children living without parents have a significantly lower chance of enrolling in high school than their peers in two-parent families. Model 1c adds parental socioeconomic status and an interaction term between urban and girl (a full model equation without the interaction is also fitted, and the only difference in the results with and without the interaction exists with the variable of girl).

Although we cannot explore how parental SES may affect the chance of schooling among children living without parents, the addition of the new information does not change the above story at all.[10] Such results fully support hypothesis 1.

(Table 3 about here)

Hypothesis 2 is also largely supported (See Table 4). Three parallel models to models 1a, 1b and 1c are fit to explore the relationship between the outcome variable and living arrangements. Within each family type, the likelihood of enrollment varies by whom the child lives with. Specifically, compared with children of two-parent families co-residing with both parents, those living only with the mother are significantly more likely to enroll in school. However, the advantage of co-residing with the mother is not duplicated for children with widowed-mother and divorced-mother; rather, such children are least likely to enroll in high school. The difference in likelihood of enrollment between the reference group and children living only with the father of two-parent families, and children living without parents is statistically non-significant.

(Table 4 about here)

In Model 2b, two new patterns emerge. First, co-residence with the father in two-parent families becomes inversely related to the likelihood of enrollment, although the coefficient is statistically non-significant. Second, children living without parents become significantly less likely to enroll in high school than their peers co-residing with two parents. Model 2c adds parental information to Model 2b. The addition of parental

[10] For comparison, I also fit models parallel to models 1a and 1b excluding children living without parents. Findings (not shown here) is almost the same. This suggests that (1) the effect of this variable on enrollment is additive; (2) we can compare the results of models 1a and 1b with that of Model 1c for corresponding predictors.

information strengthens the association of the dependent variable with two-parent families and single-father families, but slightly weakens it with stepfamilies, widowed families and single-mother families. Nevertheless, the substantive meaning maintains in this model. All else equal, the composite measures of family type and living arrangements relates to the outcome variable in the same way as they do in the first two models. For children from two-parent families, compared with those living with both parents, living only with the mother raises the likelihood of enrollment by a great margin (92 percent by taking exponential), while children of single fathers have the lowest chance to enroll in high school (over 50 percent lower than the reference group by taking exponential). These suggest that both family type and living arrangements are important for the outcome variable, net of other factors, and that interactions exist between parental configurations and other factors.

As tables 3 and 4 show, the relationship between control variables and the outcome is also important. Age is inversely related to school enrollment: compared with children age 17, those age 18 have a lower likelihood of enrollment. No significant gender difference in high school enrollment is found in this analysis, suggesting a narrowing gender gap in this level of education. However, this conclusion is constrained by the finding that rural girls are still disadvantaged as the interaction term between urban and girl reflects, while urban girls are better off in this regard. This suggests that (1) the gender story in relation to high school enrollment in China is a dichotomous one, depending on the location of residence — that is, the gender effect on education is strongly mediated by urban residence such that gender remains a condition for female development in the countryside, while in the urban

setting, girls have an equal to or even better educational opportunity than boys; (2) the promotion of gender equality is more successful in urban areas than in the countryside, and (3) the urban-rural divide is more important than the boy-girl divide, possibly due to the availability and affordability of high school education. A lower likelihood of high school enrollment among minority children than among Han children is only detected when parental SES is not considered, while minority children with similar parental backgrounds do just as well as their Han peers. For sibship composition, sibsize matters the most, but sibling gender and order also play a role, as the size of coefficients indicates — children with 3+ siblings, regardless of sibling gender and order, are most disadvantaged, followed by peers who have 2 siblings with at least 1 brother, and then by those with 1 older brother. Another model (results not shown here) with only sibsize shows that number of siblings is almost linearly yet inversely related to the likelihood of high school enrollment.

The effect of parental SES on school enrollment is as expected: children of parents with a middle school or higher education tend to have a better chance of going to school than do children whose parents have primary school education, while those of illiterate parents have the lowest likelihood of enrollment. Similarly, a more prestigious occupation held by parents is positively related to the outcome variable: children of service persons or administrators are more likely to enroll in school than do the children of ordinary workers, while children of farmers have the lowest chance of enrollment. Household economic situation is also a strong predictor of the outcome variable, and a better than average household economic situation is associated with a higher ability to send children to high

school.

Among all predictors, urban residence is the strongest one, as the size of coefficients across all models in Table 3 and Table 4 indicates. Urban youths are at least four times more likely to enroll in school than rural adolescents, this is particularly so for urban girls; their rural female peers are least fortunate, as discussed above. Region is also strongly related to the outcome variable and children in Beijing, Shanghai and Tianjin (municipalities) have a better chance to enroll in high school than those in other administrative regions.

Discussion, conclusion and policy implication

Using the 0.95‰ micro data sample of China's 2000 census, this paper describes, compares and analyzes the relationship between family type and living arrangements, and the likelihood of high school enrollment among children ages 17-18. Based on an existing conceptual framework describing the relationship between parental configurations and child education in the west, I proposed that children from two-parent families have a better chance of enrolling in high school than children from non-traditional families in China. Based on the source of children's living arrangements in China in an era of migration, I proposed that children in two-parent families who co-reside only with the mother might benefit from improved household resources, possibly due to father's migration.

Model results tend to support these hypotheses. For hypothesis 1, family type matters for adolescent education, and children of two-parent families are more likely to enroll in high school than those of stepfamilies, divorced families, widowed families and no-parent

families. Such findings are consistent with those found in the west in that children of divorced families (and also stepfamilies and widowed-families) are disadvantaged in education, supposedly due to family resource dilution. While two-parent families can exert family function maximally (Becker 1991), marital breakage (and also the death of one parent) renders children disadvantaged, because such families lack either stable or sufficient economic resources for child education or behavioral guidance and emotional support for children.

For hypothesis 2, living arrangements matter within each family type: children of single-father and widowed-mother families are most disadvantaged in school enrollment among all children; for children of two-parent families, those living with the mother are more likely, while adolescents living with the father are less likely, to enroll in school than their peers living with both parents. Such findings are unique to China in three ways. First, inconsistent with the western wisdom, it is not the children of single-mother family, but the children of single-father family, who have the lowest high school opportunity across all family types and living arrangements. In China, two types of families suffer from a higher risk of divorce: poor families and rich families. Among the divorced families in our sample, 56.4, 28.7, 11.9 and 3.0 percent of fathers are of farmers, ordinary workers, service persons and administrators, respectively; the corresponding percentages for the mother are 19.8, 25.6, 37.2, and 17.4 percent, respectively. These suggest that fathers in lower socioeconomic status have a higher rate of divorce than those with a higher socioeconomic status; by contrast, middle-class mothers are more likely to divorce. Of course, those 56 percent of the divorced farming fathers were likely to marry farming

women who do not appear in the sample since they are not living with their children; middle-class divorced mothers tend to be urban residents who are more likely to have the custody of children. Hence, the very fact that a child lives with a divorced mother instead of a divorced father may tell us more about the socioeconomic background of the child than the investments of time in the raising of that child. Diluted economic resources, together with factors not examined here (e.g., diluted behavioral guidance, school assistance, emotional support) might explain why children of single-father families have the lowest enrollment rate among all children. Conversely, while mothers' average income is lower than that of the fathers', they tend to have higher expectations for children, and adopt all possible means and resources to keep children in school. It is also possible that children residing only with the mother are emotionally more mature with a stronger sense of self-esteem and obligation to take care of the mother, which motivates them to study harder, thereby obtaining high school education opportunity. Although the census data does not allow me to test these speculations, my observations suggest these.

Second, for children of two-parent families, those living with both parents are not necessarily better off in education; which parent — the father, the mother or both parents — children live with is associated with diverse educational opportunities. Since parental marital status is controlled for, the absence of one parent can be surely attributed to migration. Geographic mobility may not only improve household economic conditions, but also open parental purviews on and strengthens their understanding of the importance of education in accessing market opportunities and social mobility, thereby motivating them to better educate children. That only those living with the mother are advantaged in

education compared with their peers living with parents who do not migrate might be, as aforementioned, related to traditional gender roles and market constraints for the father and the mother, respectively.

Third, unlike findings from other developing settings (Pong 1996), children of widowed families, particularly widowed-mother families, are also disadvantaged in education in transitional China. As reviewed earlier, the education of children in widowed families in developing countries may not be negatively affected due to financial and non-financial subsidies from kin. In China, however, children of such families are the second most disadvantaged in education. While China is still characterized by collectivism, it is obvious that external resources from kinship networks are weakened, insufficient and unsecured to compensate for the loss of one parent, if such resources are available at all.

These findings allow me to address the research questions raised at the beginning of this paper. Overall, both family type and living arrangements are important for high school education, net of an array of factors at the individual, household and contextual levels, in a time of rapid expansion of public education and socioeconomic transformation and family change. The mechanisms for parental configurations to be linked to child schooling, while deserving further study beyond this paper, are possibly linked to family resources. High school is beyond the coverage of compulsory education, demanding more monetary resources of the family. Which parent migrates out and which parent stays at home is closely linked to household resources, which makes a substantial difference for offspring's high school education opportunity. With societal change, the family also changes in structure and function with many traditional functions being either weakened or taken

away by public agencies, such as schooling. With the slowly rising rate of marital disruption and the overwhelming wave of population migration, more and more families and children will be affected, so is their wellbeing. Also, with the "golden bowl" being broken and fierce market competition, some parents are marginalized, and the father will be more so since they remain to take on the breadwinner role. Family change is intertwined with socioeconomic transformation at the macro level, which in turn affects children's wellbeing.

Although more studies are needed to fully understand the patterns of the relationships between family type and living arrangements and adolescent education, this study, while with methodological limits, contributes to our understanding of how different parental configurations have affected children's wellbeing. The findings from my analysis indicate a consistent, strong advantage of children living with the mother in two-parent families, but a strong disadvantage of children in non-traditional family types (i.e., stepfamilies, divorced families, and widowed families), particularly for those co-residing with only the divorced father and widowed mother, beyond compulsory education. It is clear that without favorable, public education policies, the officially desired quality of children from non-traditional families would remain low. However, their disadvantages in education might be offset by the expansion of the present compulsory education to twelve years and by supportive family policies, as the US case suggests (Pong et al. 2003). Only when inequalities in education among children both within and between households are reduced, along with disparities across residence and regions, can the goal of improving "population quality" of China ultimately be achieved.

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Table 1. Descriptive Statistics of High School Enrollment among Adolescens Ages 17-18 (%)			
		Percent	N
Enrollment	1=The child is enrolled in school; 0=otherwise	39.81	9007
Key predictors			
Two-parent family	1=Two biological parent family; 0=otherwise	85.70	19391
With both parents	1=Co-reside with both parents; 0=otherwise	81.80	18509
Only with the father	1=Co-reside only with the father; 0=otherwise	0.89	201
Only with the mother	1=Co-reside only with the mother; 0=otherwise	3.01	681
Stepfamily	1=Step family; 0=otherwise	3.48	787
Widowed family	1=Widowed family; 0=otherwise	3.12	707
Widowed-father family	1=Co-reside with widowed father; 0=otherwise	2.11	478
Widowed-mother family	1=Co-reside with widowed mother; 0=otherwise	1.01	229
Divorced family	1=Divorced family; 0=otherwise	1.85	419
Single -father family	1=Co-reside with divorced father; 0=otherwise	0.85	192
Single-mother family	1=Co-reside with divorced mother; 0=otherwise	1.00	227
No-parent family	1=Co-reside with no parents; 0=otherwise	5.84	1322
Control variables			
Age 17	1=The child is 17 years of age; 0=otherwise	45.93	10391
Girls	1=The child is a girl; 0=otherwise	45.32	10253
Han ethnicity	1=The child is of Han Ethnicity; 0=otherwise	92.18	20857
Sibship composition			
Single children	1=The child is a singleton; 0=otherwise	34.53	7812
1 sibling			
1 older brother	1=The child has 1 older brother; 0=otherwise	8.86	2005
1 older sister	1=The child has 1 older sister; 0=otherwise	7.10	1606
1 younger brother	1=The child has 1 younger brother; 0=otherwise	14.73	3332
1 younger sister	1=The child has 1 younger sister; 0=otherwise	9.79	2216
2 siblings			
At least 1 brother	1=The child has two sibling with at least 1 brother; 0=otherwise	14.86	3363
Two sisters	1=The child has 2 sisters; 0=otherwise	3.13	709
3+ siblings	1=The child has 3 or more siblings; 0=otherwise	6.99	1582
Parental education			
Illiteracy	1=The parent is an illiterate; 0=otherwise	2.95	629
Primary school	1=The parent has primary education; 0=otherwise	30.71	6542
Middle school	1=The parent has middle school education; 0=otherwise	44.64	9511
High school+	1=The parent has high school+ education; 0=otherwise	21.70	4622
Parental occupation			
Farmer	1=The parent is a farmer; 0=otherwise	61.29	12445
Ordinary worker	1=The parent is an ordinary worker; 0=otherwise	16.81	3413
Service person	1=The parent is a service person; 0=otherwise	13.49	2739
Administrator	1=The parent is a administrator et al.; 0=otherwise	8.41	1708
Family economic status	1=Household economy>average; 0=otherwise	30.01	6788
Urban residence	1=Urban residence; 0=otherwise	27.63	6251
Region			
Munipacility	1=Beijing, Shanghai, and Tianjin; 0=otherwise	4.20	950
Northeast	1=Heilongjiang, Jilin, and Liaoning; 0=otherwise	9.82	2221
North center	1=Hebei, Neimeng, Shanxi; 0=otherwise	12.46	2819
East	1=Jiangsu, Zhejiang, Shandong, Anhui; 0=otherwise	27.79	6288
Center	1=Hubei, Hunan, Henan, Jiangxi; 0=otherwise	18.71	4233
South	1=Guangdong, Guangxi, Hainan, Fujian; 0=otherwise	10.37	2347
Southwest	1=Sichuan, Chongqing, Guizhou, Yunnan, Xizang; 0=otherwise	9.56	2163
Nortwest	1=Shanxi, Gansu, Xinjiang, Qinhai, Ningxi; 0=otherwise	7.09	1605
Source: 0.95‰ data of China's 2000 census. Total sample size=22626.			

Table 2a. Cross-tabulation between Family Type and Living Arrangements, and Rate of High School Enrollment in 2000		
	Percent	N
Only by family type		
Two-parent family	40.30	19,391
Stepfamily	33.93	787
Widowed family	27.44	707
Divorced family	43.20	419
Living without parents	41.60	1,322
By family type and living arrangements		
Two-parent family		
With both parents	39.76	18509
Only with the father	46.27	201
Only with the mother	53.16	681
Stepfamily	33.93	787
Widowed family		
Widowed-father family	30.75	478
Widowed-mother family	20.52	229
Divorced family		
Single -father family	34.38	192
Single-mother family	50.66	227
No-parent family	41.60	1322
Source: 0.95‰ data of China's 2000 census.		
Note: All family type and living arrangements variables are significantly related to the rate of enrollment ($p<0.001$).		

Table 2b. Cross-tabulation between Control Variables and Rate of High School Enrollment in 2000			
	Percent	N	P
Age of children			
17	42.08	10391	***
18	37.87	12235	
Sex of children			
Boy	40.27	12373	
Girl	39.25	10253	
Ethnicity of children			
Minority	34.43	1769	***
Han Ethnicity	40.26	20857	
Sibship composition			
Single children	59.18	7812	***
1 sibling			
1 older brother	26.33	2005	
1 older sister	34.25	1606	
1 younger brother	35.98	3332	
1 younger sister	35.74	2216	
2 siblings			
At least 1 brother	23.70	3363	
Two sisters	29.34	709	
3+ siblings	19.53	1582	
Parental education			
Illiteracy	16.38	629	***
Primary school	24.03	6542	
Middle school	39.09	9511	
High school+	66.29	4622	
Parental occupation			
Farmer	20.98	12445	***
Ordinary worker	56.96	3413	
Service person	70.35	2739	
Administrator	78.34	1708	
Family economic status			
Lower than average	23.67	11466	***
Higher than average	56.72	10782	
Hukou registration			
Rural	24.12	16375	***
Urban	80.92	6251	
Region			
Munipacility	79.47	950	***
North center	30.12	2819	
Northeast	43.54	2221	
East	38.72	6288	
Center	36.29	4233	
South	40.78	2347	
Southwest	36.71	2163	
Nortwest	44.49	1605	
Source: 0.95‰ data of China's 2000 census.			
Note: All control variables are significantly related to the rate of enrollment ($p<0.001$) except for girl.			

Table 3. Logistic Model Results of High School Enrollment among Children Ages 17-18: China 2000 (only Differentiating Family Type to Test Hypothesis 1)

	Model 1a			Model 1b			Model 1c		
	Coef.		RSE	Coef.		RSE	Coef.		RSE
Family type									
Two-parent family (=ref)									
Stepfamily	-0.47	***	0.09	-0.46	***	0.09	-0.45	***	0.10
Widowed family	-0.71	***	0.10	-0.70	***	0.10	-0.55	***	0.12
Divorced family	-0.62	***	0.12	-0.73	***	0.13	-0.77	***	0.15
No-parent family	-0.13		0.07	-0.54	***	0.07	-		-
Control variables									
Age 17	-		-	0.17	***	0.03	0.15	***	0.04
Girls	-		-	-0.06		0.03	-0.12	**	0.04
Girl*urban	-		-	-		-	0.29	***	0.09
Han ethnicity	-		-	0.15	*	0.06	0.07		0.07
Sibship composition									
Single children (=ref)									
1 sibling									
1 older brother	-		-	-0.78	***	0.07	-0.70	***	0.07
1 older sister	-		-	-0.47	***	0.07	-0.38	***	0.07
1 younger brother	-		-	-0.36	***	0.05	-0.45	***	0.06
1 younger sister	-		-	-0.36	***	0.06	-0.42	***	0.06
2 siblings									
At least 1 brother	-		-	-0.79	***	0.06	-0.81	***	0.06
Two sisters	-		-	-0.50	***	0.10	-0.44	***	0.10
3+ siblings	-		-	-0.98	***	0.08	-0.99	***	0.08
Parental education									
Primary school (=ref)									
Illiteracy	-		-	-		-	-0.49	***	0.13
Middle school	-		-	-		-	0.35	***	0.04
High school+	-		-	-		-	0.85	***	0.05
Parental occupation									
Ordinary worker (=ref)									
Farmer	-		-	-		-	-0.51	***	0.05
Service person	-		-	-		-	0.32	***	0.06
Administrator	-		-	-		-	0.63	***	0.08
Family economic status				0.55	***	0.04	0.41	***	0.04
Urban residence	2.62	***	0.04	2.20	***	0.04	1.50	***	0.07
Region									
Munipacility (=ref)									
North center	-		-	-1.21	***	0.11	-1.19	***	0.12
Northeast	-		-	-1.35	***	0.11	-1.32	***	0.13
East	-		-	-0.67	***	0.10	-0.61	***	0.12
Center	-		-	-0.56	***	0.11	-0.47	***	0.12
South	-		-	-0.48	***	0.11	-0.43	***	0.13
Southwest	-		-	-0.85	***	0.11	-0.64	***	0.13
Nortwest	-		-	-0.16		0.12	-0.01		0.13
Constant	-1.10	***	0.02	-0.33	**	0.12	-0.19		0.15
Log likelihood	-12041.78			-11289.02			-9687.40		
LR chi2	6336.02			7309.42			7392.80		
Pseudo R2	0.21			0.24			0.28		
Total N	22626			22247			20099		
Source: 0.95‰ data of China's 2000 census.									
*p<0.05；**p<0.01；***p<0.001.									

Table 4. Logistic Model Results of High School Enrollment among Children Ages 17-18: China 2000 (Differentiating Family Type and Living Arrangements to Test Hypothesis 2)

	Model 2a			Model 2b			Model 2c		
Key predictors	Coef.		RSE	Coef.		RSE	Coef.		RSE
With both parents (=ref)									
Two-parent family									
Only with the father	0.12		0.17	-0.14		0.18	-0.23		0.19
Only with the mother	0.55	***	0.09	0.42	***	0.09	0.65	***	0.10
Stepfamily	-0.45	***	0.09	-0.45	***	0.09	-0.43	***	0.10
Widowed family									
Widowed-father family	-0.59	***	0.12	-0.57	***	0.12	-0.37	**	0.14
Widowed-mother family	-0.91	***	0.19	-0.95	***	0.19	-0.83	***	0.20
Divorced family									
Single -father family	-0.60	***	0.18	-0.70	***	0.19	-0.86	***	0.21
Single-mother family	-0.60	***	0.16	-0.73	***	0.17	-0.66	**	0.21
No-parent family	-0.10		0.07	-0.53	***	0.07	-		-
Control variables									
Age 17	-		-	0.17	***	0.03	0.15	***	0.04
Girls	-		-	-0.06		0.03	-0.13	**	0.04
Girl*urban	-		-	-		-	0.29	***	0.09
Han ethnicity	-		-	0.15	*	0.07	0.07		0.07
Sibship composition (Single children =ref)									
1 sibling									
1 older brother	-		-	-0.77	***	0.07	-0.68	***	0.07
1 older sister	-		-	-0.46	***	0.07	-0.38	***	0.07
1 younger brother	-		-	-0.37	***	0.05	-0.45	***	0.06
1 younger sister	-		-	-0.36	***	0.06	-0.42	***	0.06
2 siblings									
At least 1 brother	-		-	-0.78	***	0.06	-0.80	***	0.06
Two sisters	-		-	-0.50	***	0.10	-0.43	***	0.10
3+ siblings	-		-	-0.98	***	0.08	-0.98	***	0.08
Parental education									
Primary school (=ref)									
Illiteracy	-		-	-		-	-0.55	***	0.13
Middle school	-		-	-		-	0.36	***	0.04
High school+	-		-	-		-	0.87	***	0.06
Parental occupation									
Ordinary worker (=ref)									
Farmer	-		-	-		-	-0.53	***	0.05
Service person	-		-	-		-	0.30	***	0.06
Administrator	-		-	-		-	0.62	***	0.08
Family economic status				0.56	***	0.04	0.42	***	0.04
Urban residence	2.62	***	0.04	2.20	***	0.04	1.50	***	0.07
Region (Munipacility (=ref)									
North center	-		-	-1.20	***	0.11	-1.18	***	0.12
Northeast	-		-	-1.33	***	0.11	-1.30	***	0.13
East	-		-	-0.67	***	0.10	-0.60	***	0.12
Center	-		-	-0.55	***	0.11	-0.47	***	0.12
South	-		-	-0.48	***	0.11	-0.44	***	0.13
Southwest	-		-	-0.85	***	0.11	-0.65	***	0.13
Nortwest	-		-	-0.16		0.12	-0.01		0.13
Constant	-1.12	***	0.02	-0.35	**	0.12	-0.21		0.15
Log likelihood	-12022.17			-11277.11			-9665.98		
LR chi2	6375.24			7333.25			7435.63		
Pseudo R2	0.21			0.25			0.28		
Total N	22626			22247			20099		
Source: 0.95‰ data of China's 2000 census.									
*p<0.05 ; **p<0.01 ; ***p<0.001.									

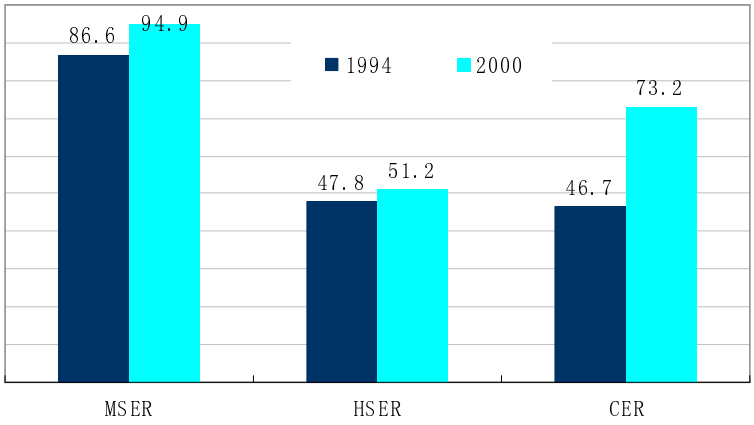

Figure 1. Conditional Enrollment Rates by Levels of Education: China 1994 and 2004

Source: NSB (1999) for the 1994 data; MoE (2003) for the 2000 data.

Notes: MSER=middle school enrollment rate among primary school graduates; HSER: high school enrollment rate among middle school graduates; college enrollment rate among high school graduates.