

# Chinese Rural-Urban Difference in Opportunity of Obtaining Higher Education

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## Abstract

This paper investigates disparities in opportunities of obtaining a higher education between the population with rural household registration and the population with urban household registration.

The analysis consists of a quantitative comparison of data and a qualitative study analyzing the reasons of the found disparities based on Chinese scientific publications and statistics supplemented with newspaper articles and public announcements from ministries and government departments.

Substantial disparities were found between the two population segments, where the rural population was severely disadvantaged - especially regarding admittance to the well acknowledged and popular institutions of higher education. The reasons for the disparities in education opportunities were found to be unequal economic development in the two segments, lower human capital in the rural segment and lower quality of compulsory education in rural districts.

## 提要

这篇论文调查了农村户口居民和城镇户口居民接受高等教育机会的差异。

在中国科学出版物和报纸上提供的数据以及来自相关部门和政府机构的一些公告的基础上，分析包含了定量的数据比较和定性的研究，来分析造成这种差异的原因。

这两种户口的居民存在着巨大的差异，农村户口居民处于严重的劣势，特别是针对于考入那些有声望的很受欢迎的高等学校。这种差异的原因在于两种地域经济发展的不平衡，农村人力资源更低，义务教育的质量也很低。

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## 1.0 Introduction

**北京考生：** 老爸，我考了 530，比一本分数线高 53 分！

**北京爸爸：** “儿子真有出息，走去上海旅游去！”

**山东考生：** “爸，我 530，跟二本线差了 20 分”

**山东爸爸：** “真没出息，别上了，滚上海打工去吧！”

**上海考生：** “爸，我 230，送我出国吧”

**上海爸爸：** “行，去学个工商管理回来帮我吧，今年又从山东招了不少农民工。”

**Examinee from Beijing:** Dad! I got 530 points on the test, that's 53 points more than I need to enter a first tier university!

**Examinee's father:** My son is truly brilliant! Go have a trip to Shanghai!

**Examinee from Shandong:** Dad... I got 530 on the test, that's 20 short to get into a second tier university.

**Examinee's father:** My son sure isn't the brightest. Don't apply, go to Shanghai and take up migrant work.

**Examinee from Shanghai:** Dad, I got 230 on the test, pay up for me, so I can go abroad and study.

**Examinee's father:** Sure thing! You go get an MBA and then come home and help me with the business; I've got another load of migrant workers coming in from Shandong this year.

This joke found on weibo sums up the topic of this paper: Where you live and how much money your family possess have a huge influence on your opportunities of obtaining a good education. To earn a lot of money one will need a good education, but to obtain a good education one will need a lot of money. Educating oneself goes hand in hand with improving your livelihood and social standing. But how are the odds of getting a higher education, if your family has scarce resources and you haven't got a scholarship? Are the rural high schools just as good as the ones in the major cities? Do you need to possess high human capital and economic resources to achieve higher human capital and economic resources?

## 1.1 Problem statement

- 1) How do the quantitative opportunities of obtaining a university degree differ between the Chinese rural population and the Chinese urban population?
- 2) How do the qualitative opportunities of obtaining a university degree differ between the Chinese rural population and the Chinese urban population?
- 3) Which social, economic and political factors are influencing this difference between the two population segments?

## 1.2 Method

This paper is a literature study mainly using scientific articles of social sciences and economics supplemented with statistical analysis to create a comparative study of disparities between two population segments and disclose the reasons for the discrepancies.

### 1.2.1 Segmentation

This paper segments the Chinese population in two groups determined by their household registration – also known as *hùkǒu* (户口). In this paper whenever the term rural population is mentioned, it simply refers to Chinese citizens with a rural household registration *nóngyèhùkǒu* (农业户口), while urban population will refer to anyone with an urban household registration *fēinóngyèhùkǒu* (非农业户口). A detailed description of the household registration terms can be found in Kam Wing Chan's article: "*The Household Registration System and Migrant Labor in China: Notes on a Debate*" from 2010. These two segments are by no means internally homogenous, and vast social and economic differences exist within each segment. Even though the two segments are not internally homogenous, two sets of relations are present at all times: the urban population in any given province or municipality is better educated and has higher income than the rural population in the same given province or municipality. Evidence of this statement in regard to income can be found by comparing table 10.15 and 10.22 in any year's edition of *China statistical yearbook* published by *National Bureau of Statistics*. Evidence of the statement regarding educational level can be found in table 1-6 in *Compilation on Time Use investigation 2008* by *National Bureau of Statistics*. A description of the rural population segment will be made by a comparison of two counties in Linfen prefecture in Shanxi followed by a brief summary of the newspaper article *Zhōngguó nóngcūn fēnhuà wéi "sān ge shìjiè" rénjūnnián shōurù xiāngchà 12 bèi* (中国农村分化为"三个世界" 人均年收入相差 12 倍) written by Li Songtao in 2006. The article explains and illustrates some of the differences within different rural communities and is therefore well suited to clarify the circumstances and dissimilarities within the segment.

### 1.2.2 Sources and statistical data

The sources of this paper will mainly be Chinese scientific articles and statistics from the Chinese National Bureau of Statistics, which is the official provider of public accessible statistics. The publications of the National Bureau of Statistics do not contain all the needed segmentations and comparisons can be difficult. The most up-to-date data available from Asiaportal is published in 2011 thus containing data from 2010. This seems to be a matter of license, as many statistical yearbooks of 2013 are published but not available without purchasing them. Data access seems to be a general difficulty as many of the Chinese writers use alternative data sources, and own field studies to create their statistical research. Many recently published articles draw conclusions on data which are several years old. To ensure the quality of the conclusions of this paper, scientific articles using older data will be compared with conclusions found in newer scientific articles relying on qualitative analysis and conclusions found in newer newspaper articles.

### 1.2.3 A general overview of the Chinese School system

A short general description of the Chinese education system will be given, in order to give an overview of the different levels of schools, the shifts from compulsory education to higher education, and to give an overview of which kinds of schooling, that requires payment of tuition fees.

#### 1.2.4 Extend of education gap

Initially an analysis of the concrete differences in urban/rural education achievements will be conducted, in order to resolve whether there is an educational gap between urban/rural citizens, and if so decide the extend of this gap. Knowing the difference in education achievements between the two segments is a crucial tool when determining the influence of social heritage and describing if the education gap is narrowing or widening. A lot of statistics, which could have shed a lot of light on this subject, are unavailable. This problem is also pointed out by Ma Wanhua in the second page of her paper: “Equity and Access to Tertiary Education: Case Study— China”. Data from Chinese scientific articles will be used, where nationally published statistics are unavailable. This analysis will provide an overview of the differences as they have been for the past two generations.

Once the difference in education achievements has been established, an analysis of the difference in admittance opportunity will be carried out. This will be based on the article *Zhōngguó míngxiào shēngyuán jíjù biànciān nóngcūn xuéshēng nán rù míngpái dàxué* (中国名校生源急剧变迁农村学生难入名牌大学) published on Sina 6<sup>th</sup> of August 2011 by Pan Xiaoling, Shen Qianrong, Xia Qian, Liu Xing and He Qian, supplemented with a logarithmic regression analysis, testing the correlation between a university’s popularity and its proportion of students with rural household registration. The data of rural/urban proportion has been collected by searching through a wide range of universities’ annual education quality reports, and harvesting the data which segment the students by household registration. The vast majority of universities don’t show this segmentation in their annual reports, and the dataset is therefore very small. The rate of popularity is measured as the number of visits on the university’s homepage; this data is provided by the homepage 4international Colleges and Universities. As the homepage only supplies data in real time, a time difference of one year exists between the datasets compared. This is a minor flaw in the method, but it has been deemed insignificant. This analysis will specify whether the education gap between the two segments are currently widening or narrowing.

#### 1.2.5 Reasons for the education gap

Chapter 5 6 and 7 will analyze the reasons for the education gap. The chapters are not strictly divided into political social and economic reasons, as the three factors are strongly intertwined. Chapter 5 is an extension of chapter 2 and will analyze how Chinese education policies affect the applicants, and which advantages and disadvantages these policies have on the two population segments. The analysis is divided into three parts investigating the following:

The first part will analyze elitist selection at prestige universities and the government’s allocation of funds to these institutions, which will be used to determine the qualitative education differences between the two segments. This part will mainly be based on Wang Jing’s article *Cóng “211” hé “985” kàn zhèngfǔ duì gāoděng jiàoyù cáizhèng tóurù de “mǎ tài xiàoyìng”* (从 “211” 和 “985” 看政府对高等教育财政投入的 “马太效应”) from 2009. This will be supplemented with an update of the data used in the article, and a regression analysis testing for correlation between education expenditure per capita and proportion of rural population, government appropriations proportion of total funds and Western-poor provinces. As the latter variable is a yes/no answer it will be inserted into the regression as a dummy variable, which means that each province tested will be assigned with the value 1 or 0 depending on whether they are Western-poor provinces or not. The reason it is relevant to make this distinction is because special policies apply for the impoverished provinces with a high percentage of ethnic minorities. The dataset and test are attached in appendix I.

The second part will be an analysis of the discrepancy between supply and demand of senior high schools, and correlation between the senior high school's quality and their geographical location. This section will be used to determine, whether the students from rural and urban districts have equal access to preliminary education.

The third part will examine, how regional enrollment quotas at the institutions of higher education cause uneven access opportunity from one province to another. The provincial disparities compared with the respective provinces' proportion of rural populations will give an indication of the difference between urban and rural admittance opportunity. This part will mainly be based on Ma Wanhua's *"Equity and Access to Tertiary Education: Case Study—China"* and Wang Houxiang's doctoral dissertation: *Wǒ guó gāokǎozhèngcè de gōngpíngxíngyánjiū* (我国高考政策的公平性研究) from 2008.

Chapter 5 will determine difference in quality of preliminary schooling by comparing test results from schools in villages, towns, local cities and provincial capitals, and examining the rates of qualified teachers in urban and rural districts respectively. This chapter will conclude, if rural students are as well prepared and well-schooled for the university entrance exams as their urban peers.

Chapter 6 will determine the influence of parents' background - social as well as economic. The social analysis will be based on Xu Yang's article *"Access to higher education for rural-poor students in China"* from 2010, which compares educational achievement between parents and child. The results will be discussed and compared to conclusions of other articles. The economic analysis will illustrate the economic burden of financing a child through senior high school and university by comparing the annual income of an average rural household with the average costs of attending school. The analysis will be supplemented with a discussion of the difference of feasibility of taking an education for rural and urban students.

### 1.3 Delimitation

This paper will analyze general trends and tendencies of the past 10 years with a focus on the most recent changes. The most up to date statistics available on the libraries' database subscriptions are from 2011 and 2010, and the will be used to describe the current trends, where newer scientific articles and newspaper articles found doesn't state otherwise. Since education is a process taking several years, and applied education policies don't have immediate evident results, this paper will focus on general trends and tendencies in the abovementioned time sequence, and legislative changes of school politics commenced within this interval will only be analyzed, if cause and effect of the legislative change can be properly ratified. This paper delimitates from analyzing the influence of the access to scholarships and student loans. The impact of relations with the right people and bribes will not be analyzed, as it is too imperceptible and difficult to measure.

## 2.0 An introduction to the Chinese school system

Chinese compulsory education consists of 9 years of schooling divided in two parts; five to six years of primary education followed by three to four years of junior high school. The nine years of Chinese compulsory education is mandatory and free of charge in accordance with Compulsory Education Law of the Peoples' Republic of China Article 2 (中华人民共和国主席令，第二条). Further education is subject of tuition fees.

By the end of junior secondary school, the students take the Joint Graduation Examination named Gāozhōng jīchǔ huìkǎo (高中基础会考) - often simply referred to as huìkǎo. Besides serving as the foundation of the student's certificate of completing compulsory education, the student's test scores decides whether they can be accepted into a senior secondary school or not.

After completion of senior secondary school, the students who wish to continue academic studies will take the National Higher Education Entrance Examination, often referred to as gaokao (高考). It is not a formal requirement to have passed senior secondary school, to attend the gaokao as long as the student possesses corresponding academic skills (see first section of 2009 高考考试大纲导读). This means that there are two competitive thresholds that a student must pass before being enrolled into an institution of higher education. The quality of the education provided in primary school and junior secondary school is therefore an important factor for the competitiveness of its students and a difference in quality of these schools will cause a difference in opportunities of enrollment into senior secondary school, and a difference in quality of the senior secondary schools will cause an uneven competition for the enrollment at the universities. The relative quality of education in rural primary schools, junior and senior secondary schools will be analyzed in chapter 5.2 and 6.

Chinese compulsory education is governed by the local authorities and the schools are mainly funded by taxes levied by the local government. A survey from 2001 showed that 78% of expenditure on compulsory education was paid by the village/town's funds while approximately 9% was funded by the county, 11% by the province and only 3% was funded by the central government (Li, 2007). Su (2009) refers to the same survey, and newer publications stating a change of practice in funding have not been found. The regional disparities in income causes uneven funds of the local governments which reflect in the resources provided to the local schools (Li 2007).

Since the students only have rights to attend school in the area of their own household registration, the quality of their schooling is heavily influenced by the economy of their local village/town (Li 2007, Qian and Smyth 2008, Shen 2006, Zhu 2013). If a student wishes to study at a school outside of his/her area of household registration, he/she will have to pay full tuition and an additional charge for the borrowing of school facilities called jièdú fèi (借读费) (Li 2007, Wu and Du 2012). It can thus be concluded, that the structure of the Chinese school system opens for the possibility of inequity between wealthy counties and poor counties, as it is mainly local levied taxes that pays for the local schools.

### 3.0 Characteristics of rural households and internal differences

Citizens with rural household registration was chosen as a focus group for this paper as they generally have lower income than urban citizens as shown in table 1:

Table 1

Annual income per capita divided by region and household registration 2010				
		Urban annual net income (RMB)	Rural annual net income (RMB)	Urban-rural ratio
<b>National average</b>		<b>21,033</b>	<b>5,919</b>	<b>3.55</b>
Coastal region	Shanghai	35,739	13,978	2.56
	Zhejiang	27,359	11,303	2.42
	Guangdong	26,897	7,890	3.41
Central region	Henan	17,142	5,524	3.10
	Hunan	17,657	5,622	3.14
	Jiangxi	16,558	5,789	2.86
Western region	Sichuan	17,129	5,087	3.37
	Guizhou	15,139	3,472	4.36
	Gansu	14,307	3,425	4.18

Source: *China statistical yearbook 2011 chart 10.15 and 10.22, setup is imitated from Halskov and Thøgersen (2008)*

The trend illustrated in table 1 applies to every province of China: the lowest provincial urban-rural income gap is found in Heilongjiang, where the urban citizens statistically have an annual net income which is “only” 2.43 times higher than their rural counterparts. A full list of annual rural/urban net income of all provinces is attached in appendix II.

It is not only obvious that the rural population statistically have a huge economic disadvantage compared to their urban counterparts, but the statistics also show, that the province the family has household registration in, has substantial influence on their expected income. The coastal provinces have the highest level of income, while the level decreases the further west you go. Table 1 shows substantial differences in mean income both between provinces but especially between types of household registration. But since the standard deviation isn't given in the data, one can only wonder, how much difference in income there is within a single province and even within a single prefecture.

A good illustration of this difference can be found by pulling statistics from a single prefecture level city and compare the gross domestic production per capita for two of the prefecture's counties; in the publication *2010 Línfén tǒngjì niánjiàn* (2010 临汾统计年鉴) the GDP per capita in Yonghe County is 5,632 RMB in 2009 while the GDP per capita in Gu County amounts to 47,933 RMB the same year. The two counties are only 188km apart, and yet the citizens under Gu County's administration enjoy an income approximately 8.5 times higher than those under Yonghe County's. One of the reasons for Gu County's relative well developed economy may be its location approximately 51km from Linfen City, while the distance from Linfen City to Yonghe County roughly amounts to 165 km. Regardless of the reason the income gap between these two counties

is substantial. (*Notice that there is a difference between annual net income per capita and Gross domestic product per capita, and the above mentioned example cannot be directly compared to the statistics of table 1. The statistics of each county contains both rural inhabitants of the county (县) and the rural inhabitants of the villages (乡/村) within the county's administration.*)

This shows that substantial income gaps do not only exist between provinces, but also between counties under the same prefecture.

How the local conditions differ among different groups living in rural areas are described very well in the newspaper article *Zhōngguó nóngcūn fēnhuà wéi "sān ge shìjiè" rénjūnnián shōurù xiāngchà 12 bèi* (中国农村分化为"三个世界" 人均年收入相差 12 倍) written in 2006 by Li Songtao. The article narrates of the student Tian Bo, who remembers the times of his junior high school graduation, and how only 3 out of his class of 48 people continued their studies after the graduation. Tian Bo explains how the old classmates are either engaged in agriculture or left the hometown to do manual labor in the cities. The article explains, how conditions as Tian Bo describes only occurs in areas with a low level of development, while some well-off villages actually pay all the tuition fees of the village's children until they have passed senior high school; some villages even pay the tuition fees of university and foreign exchange programmes. A such example is pulled from the village Sanfangxiangcun in Jiangsu Province, where the student Bian Zhaofeng have had all tuitions paid from he started school to his graduation at the university without his family having to pay a dime besides his ordinary living expenses.

Li (2006) illustrates how differences between villages can arise by interviewing villagers from two separate villages along the same river bank; The upriver village is prosperous and have a paper factory while the downriver village is poor and are severely disadvantaged by water pollution due to chemical waste from the paper factory upstream; one village harvests the fruits of industry while another pays the toll of the pollution. Minzi Su has in his book *China's Rural Development Policy – Exploring the New Socialist Countryside* written a passage on page 228 which very precisely sums up the diversity of rural China: *"There is no one recipe for success; and there is enough regional variation in China to squelch any attempt at generalization. There didn't seem to be much point in beginning a revitalization project unless the starting point was well defined. "Just do it!" may work for tennis shoes, but is not a good formula for rural development. There is almost always more than one combination of real and human assets that can lead to success, if success is possible. Because of favorable real and/or human assets, there are some areas in rural China that have needed little or no outside help"*.

When taking the abovementioned facts into account, it is of utmost importance not to generalize the rural population, and all conclusions made have to be affixed with a note of the high deviation, and factors such as distance to provincial capital, local economic development and regional economic development (West/Central/Coastal) have to be included in each part conclusion, in order to avoid a general synthetic statistical conclusion which does not portray reality as it is.

### 3.1 Demography of the rural population

Shanghai Beijing and Tianjin are the three administrative units with the lowest rates of rural inhabitants; 11.40%, 15.00% and 21.99% respectively (see appendix II). The highest rates of rural inhabitants are found in Gansu, Guizhou and Tibet with proportions of 67.35%, 70.11% and 76.20% respectively. It is a general rule that the proportion of rural inhabitants rises the further west you go. East China has a relatively small proportion of rural inhabitants while Central China's proportion is somewhat higher and Western China is home to the largest proportion of rural Chinese (ibid). This

demographic trend is relevant when analyzing the geographic placement of higher education institution and the geographic investments of education funds, as investments in eastern provinces are more likely to benefit the urban population and vice versa.

## 4.0 Extent of educational gap between rural and urban citizens

### 4.1 General level of education in rural areas

In the statistical yearbook *Compilation on time use investigation 2008* published by *Department of Social Sciences, National Bureau of Statistics*, a summary of highest education level achieved has been conducted:

**Table 2**

Highest level of education			
	Total (people)	Urban (people)	Rural (people)
Total	37,142	19,621	17,521
No education	1,625	176	1,449
Primary School	6,250	1,131	5,119
Junior Secondary Education	12,898	4,816	8,082
Senior Secondary Education	9,422	6,970	2,452
Higher Education	6,947	6,528	419

*Source: Compilation on Time Use investigation 2008, chart 1-6*

The totals referred to above is not an average of all of China but represents; Beijing, Hebei, Heilongjiang, Zhejiang, Anhui, Henan, Guangdong, Sichuan, Yunnan and Gansu. The respondents are aged from 15 to 74 years, and The proportion of respondents aged from 15 to 34 only accounts for 25.12% of the total survey (ibid, 9), and the trends found in this survey can therefore only be used to conclude how the education level between the rural and urban population has differed as a *whole and over the past two to three generations*. Current trends about difference in opportunity for young people will be analyzed in chapter 4.2. The survey illustrates how 33.27% of the urban respondents have obtained higher education while only 2.39% of the rural respondents hold a degree of higher education. 8.27% of the rural respondents had not obtained any education what so ever, while only less than 1% of the urban respondents hadn't received any teaching. The tendencies in this survey are seconded by Wang and Lie (2011) who have made a survey in Shandong during July 2010. In this survey 485 rural respondents and 680 urban respondents have stated their highest educational level. Wang and Lie discovered that only 20.41% of the rural respondents held a tertiary education while 57.20% of the urban respondents had obtained education beyond senior secondary school. So seen as a whole, it can be concluded that a substantial education gap exists between the rural and urban population.

Table 3

Age group	Total years of schooling							
	2009				2008			
	National average	Urban	Rural	Urban-rural disparity	National average	Urban	Rural	Urban-rural disparity
6 years and above	8.38	9.49	7.38	2.11	8.27	9.42	7.28	2.14
15 years and above	8.60	9.79	7.49	2.30	8.48	9.71	7.39	2.32
15 to 64 years	9.09	10.22	8.02	2.10	8.98	10.15	7.92	2.23
25 to 64 years	8.71	9.93	7.54	2.39	8.63	9.82	7.45	2.37
60 years and above	5.46	6.85	4.27	2.58	5.19	6.58	4.10	2.48
65 years and above	4.90	6.38	3.66	2.72	4.65	6.09	3.50	2.59

Source: 2009 *Zhōngguó rén kǒu biǎo* 6-3 (2009 中国人口表 6-3)

As illustrated in table 3 the average years of education is decreasing concurrently with the age of the respondents. This is simply caused by the general increased level of education. Segments of 6-25 years and 15-25 years would have been preferred as it would have been possible to point out the current trends of the education gap, however if the 15 to 64 year interval is compared with the 25 to 64 year interval, it can be seen that education gap is narrowing by 0.29 years when adding the young people aged 15 to 24. This indicates that the *general* education gap between rural and urban population in the age 15 to 24 is lesser than that of the age group 25 to 64. It can be concluded that the rural population in general have had 2 years less schooling than the urban population, but this gap is slowly narrowing.

#### 4.2 The Rural population's opportunities of admittance to universities

In the article *Zhōngguó míngxiào shēngyuán jíjù biànrqiān nóngcūn xuésheng nán rù míngpái dàxué* (中国名校生源急剧变迁 农村学生难入名牌大学) by Pan et al (2011) the authors have interviewed professors hired at Tsinghua University, Peking University and Fudan University; three highly prestigious institutions which all are sponsored and receive funds from Project 985 and Project 211 (This will be explained further in chapter 4.1). According to the article of Pan et al (2011), Peking University admitted three tenths of their students from rural households in the years 1978 to 1998. In the mid 90's this tendency started to change and the proportion of students originating from rural households started to decline. From the year 2000 and up to present time of the article (2011), the proportion of rural students being admitted into Peking University has only accounted for roughly one tenth of the total number of students. A similar trend was discovered at Tsinghua University. Here a sample of students of the faculty of liberal arts was examined by an undergraduate. The undergraduate found out, that only 17% of his sample of students derived from rural households while the national proportion of applicants of rural households applying for

universities amounted to 62%( *ibid*). A teacher working at the recruitment office of Fudan University states in the article, that the proportion of poor students admitted are continuously decreasing and the large majority of students at the institution are from wealthy families with solid educational background and well respected social position in the society (*ibid*). Since urban families not necessarily are very wealthy, it would be wrong to conclude that Fudan University accepts very few students of rural heritage - wealthy rural families do exist as well. Luckily Fudan University and a few other Universities have published their numbers of newly admitted students segmented by household registration, and this is illustrated in table 4 below. The relation between wealth and acceptance at universities is relevant however and it will be studied further as a reason for the education gap in chapter 7.

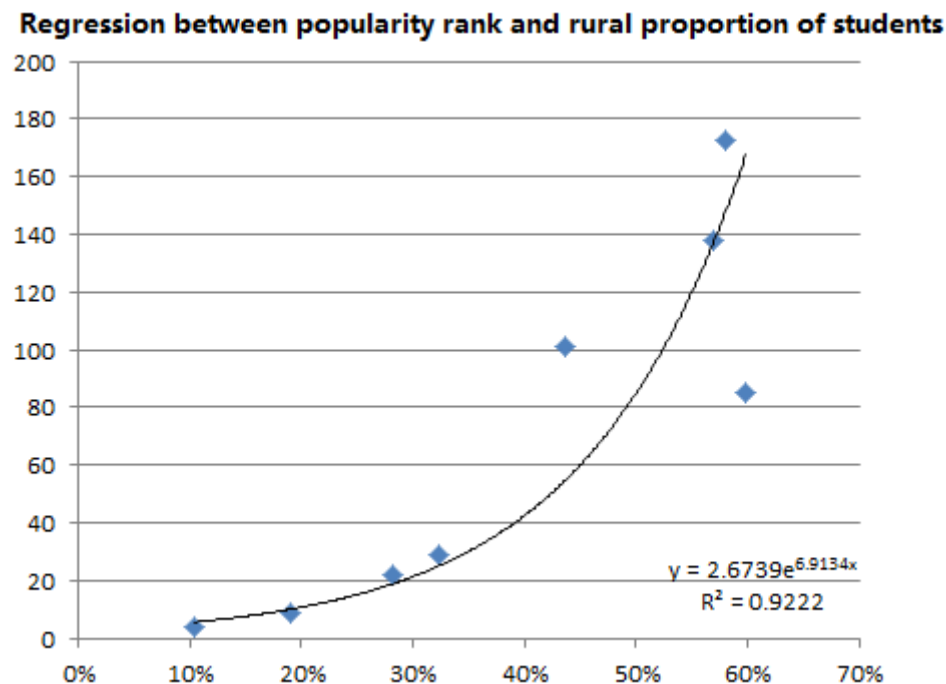
**Table 4**

	Urban	Rural	Rural proportion	Popularity Rank	Source
Fudan University	2,657	307	10.36%	4	Fùdàn dàxué2012nián běnkē jiàoxué zhiliàng bàogào, 9 (复旦大学2012年本科教学质量报告, 9)
Tongji University	3,495	819	18.98%	9	Tóng jì dàxué2012nián běnkē jiàoxué zhiliàng bàogào, 4 (同济大学2012年本科教学质量报告, 4)
Tianjin University	2,888	1,131	28.14%	22	Tiānjīn dàxué2012nián běnkē jiàoxué zhiliàng bàogào, 6 (天津大学2012年本科教学质量报告, 6)
Jilin University	6,993	3,332	32.27%	29	Jílín dàxué2012-2013xuénián běnkē jiàoxué zhiliàng bàogào, 3 (吉林大学2012-2013学年本科教学质量报告, 3)
Northwest Normal University	1,910	2,847	59.85%	85	Xīběi shīfàn dàxué 2012niándù běnkē jiàoxué zhiliàng bàogào, 4 (西北师范大学 2012年度本科教学质量报告, 4)
Nanchang university	5,125	3,975	43.68%	101	Nánchāng dàxué2012nián běnkē jiàoxué zhiliàng bàogào, 3(南昌大学2012年本科教学质量报告, 3)
Kashgar Teacher's College	998	1,322	56.98%	138	Kāshén shīfàn xuéyuàn2012niándù běnkē jiàoxué zhiliàng bàogào, 4 (喀什师范学院2012年度本科教学质量报告, 4)
Taiyuan University of Technology	(total 5960)		58%	173	Tàiyuán lǐ-gōng dàxué2011niándù běnkē jiàoxué zhiliàng bàogào, 10 (太原理工大学2011年度本科教学质量报告, 10)

*Popularity rank provided by 4international Colleges and Universities (<http://www.4icu.org/cn/>)*

By making an exponential regression on the data in table 4 a correlation is found:  $Y = 2.6739e^{6.9134x}$ , where Y is popularity rank and X is rural proportion of students. The test has a R<sup>2</sup> (certainty) value of 92.22%. Under normal circumstances a confidence interval below 95% would not be acceptable, but taking the very small size of the dataset into consideration, the confidence interval of 92.22% is acceptable.

Table 5



So with an uncertainty of 7.78% Table 4 and 5 shows a clear reverse connection between a university's popularity rank and its proportion of rural students admitted. It does not only confirm the statements made in the article by Pan et al (2011) but also suggests that the rural population in general does have a broad access to higher education, but in most cases only to second and third tier institutions.

## 5.0 Chinese legislation's influence on education opportunities

This chapter analyses how Chinese policies and legislation affects the opportunities of obtaining education for the urban and rural population segments.

### 5.1 Political allocation of education funds and Project 985 and Project 211

Project 211 and project 285 are two programmes commenced to raise the academic level of selected universities in China to enforce the quality of education in China and to create Chinese universities of world class quality (Wang 2009). Project 211 was established in 1995 as a part of the Chinese education reform and development program, and the purpose was to concentrate the resources of the central authorities to establish approximately 100 universities, whose quality of education, quality of research and level of administrative effectiveness would reach the standards of international universities (ibid). Project 985 was announced on Peking University's 100<sup>th</sup> anniversary on 4<sup>th</sup> of May 1998 by the leaders of the Ministry of Education, and here it was suggested that the government each year would allocate 1% of the total investments to a few selected universities in order to ensure the capital to establish world class universities (ibid).

In his article Wang (2009) describes how China has 1070 institutions of higher education, but the institutions included in either Project 211 or Project 985 only amounts to 139, which means that only around 13% of the institutions enjoy the massive investments made by the central government through the two projects. A large share of the 139 universities are placed in the wealthy areas

along the eastern coast; Beijing municipal is home to 30 institutions, Tianjin 6, Nanjing 10 and Shanghai 14 (See appendix 3 for a full map). Wang (2009) explains that the difference of quality between 211-985-institutions and non-211-985-institutions simply can be seen as the difference in invested capital; if institution B had enjoyed the same investments as institution A, then there wouldn't be a difference in quality between the two institutions. The institutions selected to participate in Project 211 and Project 985, was picked out by merit, and thus the most well-funded ones was chosen for the projects, giving the strong institutions the opportunity to grow even stronger and leaving the less well-funded institutions without the opportunity to improve their standards through investments from the Central Government (ibid). Wang (2009) explains this phenomenon as the Matthew's Effect of the education system. On page 57 he sums up the effect of the two projects: “强的越来越强，弱的越来越弱” (The strong gets stronger, while the weak gets weaker). Wang (2009) explains how the central government deliberately is establishing these elite institutions; According to Wang's (2009) studies, the Central government has limited resources to invest in education, and they want to ensure a safe and high return of interest on their investment: this is best achieved by investing in institutions which already have achieved good results, have a famous “brand name” and where other private and public organizations are willing to invest capital. But while this way of investing may prove the safest and ensure positive results, it also creates stratification within the education system (ibid). Wang (2009) gives examples of this stratification by mentioning how some companies do not accept applications from candidates graduating from non-211/985 institutions, and companies who solemnly direct their recruitment work at 211/985 graduates.

Wang (2009) illustrates how a large proportion of the education funds are ensured by government appropriation in wealthy provinces such as Beijing and Shanghai (75% and 71% respectively) while the less economic developed provinces such as Hubei and Hunan (55% and 54% respectively) have a higher degree of alternative funding. Government appropriation does not mean a complete funding from central government; it simply refers to the amount of budgetary and non-budgetary education funds that are earmarked to specific purposes, and thus are ensured by legislation. Tuition fees are not included in the appropriated funds, meaning the higher the government appropriation the lower the relative tuition fee of total education expenses. The statistics Wang (2009) uses are from Educational Statistics Yearbook of China 2007. In this publication it is also illustrated how the central governments proportion of education expenditure amounts to 11.84% (116.2 billion RMB out of 981.3 billion RMB total).

With the extremely fast development of China, it is important always to apply the newest data available, so if Wang's analysis is compared with the most recent published data from *Educational Statistics Yearbook of China 2010* page 624, it can be seen that Beijing and Shanghai's percentage of government appropriated funds have risen to 88% and 77% respectively while Hubei and Hunan's share have risen to 66% and 71% respectively. So the relative increase in government appropriation for Hubei and Hunan has been significantly stronger than that of Shanghai and Beijing, which indicates a structural assimilation of the well-developed municipals and less well-developed provinces. This is however only a structural change and is mainly ensuring funds by reservations within the provinces' and sub provincial levels economy, and thus doesn't ensure funds from outside of the provinces' assets.

Educational Statistics Yearbook of China 2010 page 624 shows that the central government's proportion of total education expenditure amounts to 10.97% (181.1 billion RMB out of 1,650.3 billion RMB total) a decrease since 2006 of 0.87 percentage points. In the abovementioned statistical publications it is not specified how or where the funds of the Central

Government are invested, so the effect of the decrease of central governments proportion of total education expenditure from 2006 to 2009 cannot be determined, as it is unknown where the central governments expenditures have been cut, raised or switched between elementary education to higher education etc..

In table 6 below it is shown how Beijing, Tianjin and Shanghai all have a rate of rural inhabitants below 25%, while the total tuition fees collected in these municipals doesn't amount above 16% of the total expenditure of education. The expenditure on education per capita in the three municipals is more than twice as high as other provinces' shown in the chart. One could get the impression that there is a correlation between education expenditure per capita, proportion of rural population and government appropriations proportion of total funds. A correlation was not found statistically significant when a linear regression analysis was commenced on data of all the Chinese provinces, and the explanation value did not surpass 66%, even when the western impoverished provinces were marked with a dummy value (see appendix I).

**Table 6**

<b>Education expenditure and proportion of rural population</b>						
	Total expenditure (10.000 RMB)	Rural percentage of population	Total population (10.000 capita)	Education expenditure per capita (RMB)	Tuition fee (10.000 RMB)	Tuition fee as percentage of total expenditure
Shanghai	4,937,339	11.40%	1,921	2,570	688,345	13.94%
Beijing	5,289,432	15.00%	1,755	3,014	503,559	9.52%
Tianjin	2,381,672	21.99%	1,228	1,939	359,736	15.10%
Shandong	8,397,429	51.58%	9,470	887	1,379,027	16.42%
Hubei	5,194,495	54.00%	5,720	908	1,127,650	21.71%
Hunan	5,660,684	56.80%	6,406	884	1,068,199	18.87%
Guangxi	3,873,253	60.80%	4,856	798	570,102	14.72%
Sichuan	8,088,479	61.30%	8,185	988	897,783	11.10%
Henan	7,633,496	62.30%	9,487	805	1,194,810	15.65%

*Source: Educational Statistics Yearbook of China 2010 page 624-625 and China Population and Employment Statistics Yearbook 2010 page 35*

So the statements in Wang's article from 2009 regarding the high percentage of government appropriation for education in the wealthy cities are still true, but the gap is slowly narrowing. The central government invests heavily in the prestige universities, with an agenda of creating elite universities and ensuring feasibility of the invested funds.

The central governments proportion of the total national expenditure on education only amounts to approximately 11%, which means that there is little room for reallocation of funds, and in a regression made by Shen (2006), it has even been proved that there is a direct connection between the local governments investment in education and the allocated funds of the central government.

## **5.2 Bottlenecks at the senior high schools and school selection fees**

A large proportion of the rural school children attending senior high school don't attend classes in their local village as the prerequisites of running a local high school often isn't present due to the size of local population and local economy. Instead they travel to the nearest city of their

county and attend school there. Jing and Yu (2006) have identified a large problem of bottlenecks at the senior high schools. Jing and Yu (2006) states that the bottleneck problem is mainly affecting the rural communities, and they illustrate this with an example from Heilongjiang: Here more than 50% of the applicants to senior high schools come from rural households, but the actual admittance of rural students is only 5.02%. In Guizhou they found a junior high school capacity of 370,000 pupils while the capacity of the senior high schools only amounted to 110,000 pupils – a potential capacity of 29.7%. For comparison the national average of pupils taking senior high school was 42.8% at that time (ibid). A similar situation was found in the provincial capital of Yunnan; Kunming, here the capacity of junior high schools was 197,200 pupils, while the capacity of senior high schools was 50,000 pupils – a mere 25.3%. These bottlenecks creates a fierce competition between the students applying for admission, and the limited availability has made some senior high schools charge very high tuition fees (ibid), weeding out the families without solid financial resources, which often means weeding out the rural households. Jing and Yu (2006) concludes from their survey that 80% of the urban junior high school graduates have direct access to senior high school, while only 5 to 10% of the population from rural households have such access. This general trend is confirmed by two newer articles from 2010 written by journalists. The journalist Wu Xiaoyang has in his article *Yúnnán shěng Rén-Dà dàibiǎo jiànyì: dǎpò pínkùn nóngcūn gāozhōng jiàoyù píngjǐng* (云南省人大代表建议：打破贫困农村高中教育瓶颈). In this article Wu (2010) states that the bottlenecks of senior high schools have been narrowing and hereby increasing the problem of admittance. Wu (2010) uses the poor Qiaojia County as an example: The entire county has a population of close to 540,000 people, with 93,500 students attending school at one level or another. Of these 93,500 people only 4,470 students are studying at senior high school, which equals 0.83% of the county's population (note; this the attending rate, not the graduated rate). Only 22% of all the junior high school graduates will have the opportunity of attending senior high school (ibid). The persistence and escalation of the bottleneck problem is confirmed by He Xiaoming in the article *Guānyú wǒ shì pǔtōng gāozhōng jiàoyù xiànzhuàng fēnxi yǔ tūpò fāzhǎn "píngjǐng" duìcè de jiànyì* (关于我市普通高中教育现状分析与突破发展“瓶颈”对策的建议). He (2014) attaches importance to two factors: 1) the cost of changing from one school to another and 2) the general cost of attending senior high school. He (2014) describes how it has been legalized for ordinary senior high schools to charge a fee to take in a student who originally wasn't admitted by the merit of his/her test score. This school selection fee is often more than 10,000 RMB and sometimes several 10,000's RMB (ibid). This makes a school shift into a good senior high school extremely difficult if not impossible for a rural family with an average annual income of 8,000 to 28,000 RMB and furthermore blocks out students, who otherwise would have been enrolled on merit.

### 5.3 Admission quotas and demographic location of the universities

The Chinese universities have quotas of enrollment which means that applicants are not evaluated all together, but are clustered with other applicants of their own province (Ma 2010, 25, 28 and 51-52). So a high score on the national entrance exam does not necessarily ensure the student a spot at a good university, if the student's household registration is from a province whose quota is unfavorable. If a university has a small quota of students from a specific province, then the needed test score will be higher, as there are more students competing for the enrollment (Wang 2008, 89).

Table 7

Test scores for access to higher learning institutions in different provinces in 2006.

categories	Humanities and social science (test scores)				Sciences and engineering(test score)			
regions	211/985	regular university	local colleges	short cycles	211/ 985	regular university	local university	short cycles
Shandong	568	549	526	280	583	553	527	280
Beijing	516	467	442	338	528	476	442	350
Hunan	593	556	513	320	547	496	467	280
Zhejiang	583	550	501	491	570	527	466	448
Tianjin	477	436	410	350	505	455	430	340
Qinghai	452	386	348	315	434	374	335	320

Source: Ma Wanhua, 2010, Equity and Access to Tertiary Education: Case Study—China, page 52

A student from Shandong scoring 528 points at the Gaokao will not be admitted to a regular university and will just barely make his/her way to a local university, while a similar student from Beijing or Tianjin with a similar test score will have made it into one of the highly prestigious 211/985 universities. The quotas are set by the local universities under the guidance of the Ministry of Education but the provinces generally have more favorable quotas for provinces with a high gross enrollment of students (Ma 2010, p 54). It has been pointed out, that there is very little research, on how the enrollment quotas are determined (ibid). An example from Peking University is given:

Table 8

The planned enrollment quotas of Peking University in some provinces in 2008<sup>65</sup>

provinces	Numbers planned to enroll in Humanities and social sciences	Numbers planned to enroll in science and engineering	Total enrollment	Numbers registered for Peking University (10 thousand people)	%Opportunity to get into Peking University
Beijing	106	180	280	10.37	17.94
Henan	30	49	79	90.5	0.88
Jiangxi	18	27	45	38.44	1.17
Anhui	20	23	43	61	0.70
Hubei	25	42	67	52.5	1.28
Gansu	10	10	20	30	0.67

Source: Ma Wanhua, 2010, 54

The table shows how 103,700 people from Beijing compete for 280 admissions, while 300,000 people from Gansu compete for the 20 admissions of their province. (*There seems to be a typing error in Beijing's data; 6 students disappear in the total enrollment. This error is ignored as it doesn't change the fact that Beijing residents have a very high quota of admission, and therefore a way better chance of admission than the other provinces shown in the chart*).

This tendency is confirmed by Wang Houxiong in his article: “Access to Higher Education in China: Differences in Opportunity” from 2011, in which he on page 233 states: “The provincial quota enrollment policy directly relates to the distribution of higher education access in different regions. The policy has revealed its weak rational basis, becoming a kind of machine that replicates existing social and regional differences”. In his doctoral dissertation from 2008 Wang uses a method of calculating a group’s opportunity of admittance to university as an index named education opportunity index (入学机会指数) which is defined on page 236 and calculated as shown below:

$$\text{入学机会指数} = \frac{\text{该省区招生数占全国招生总数的比例}}{\text{该省区高中毕业生数在全国高中毕业生总数中的比例}}$$

The education opportunity index equals the proportion of the ratio of the regions enrollment number to the national total enrollment number divided by the ratio of the regions high school graduates to the national total number of graduates.

In a “fair world” every province would have an opportunity index equal to an average of the entire country = 1. This is however not the case. The opportunity index of Beijing Shanghai and Tianjin was in 2006 2.63, 1.80 and 1.95 respectively, while the index of Gansu Guizhou and Sichuan were 0.54, 0.70 and 0.85 respectively (ibid, p 236). A high school graduate from Beijing is thus 4.87 times more likely to be admitted into a university than a similar student from Gansu. Wang has mapped the institutions of higher education, the number of applicants and the number of accepted applicants divided into four regional segments: Beijing-Shanghai-Tianjin area, eastern area, central area and western area (Wang 2008, 8). In this drawing, the admissions into 211 universities and 985 universities are shown separately, and an opportunity index is calculated for each (Wang’s data is collected in 2007 publications):

**Table 9**

	Opportunity index		
	All Higher education institutions	211 Universities	985 Universities
Beijing-Shanghai-Tianjin area	3.03	10.41	3.76
Eastern area	0.97	0.70	0.26
Central area	0.95	0.67	0.22
Western area	0.87	0.69	0.23

Source: Wang 2008, 82

Students from the western area with its high proportion of rural inhabitants have the absolute lowest opportunity of being enrolled at a university and even more so at 211/985 universities. This clear division of opportunity indexes confirms a strong quantitative difference in opportunity between China’s three wealthy municipals and the rest of the country and the substantial differences in 211/985 opportunity indexes clearly shows a strong qualitative difference of education opportunity between the three municipals and the rest of the country. The shown indexes validate the conclusion made in chapter 4.2 from table 4, and also hint that education opportunities follow the money. The three municipals are all within top 4 of wealthy provinces/municipals in China (see appendix II).

## 6.0 Quality of the rural schools

In the article by Pan et al (2011) a student from Hebei studying at Beijing University is interviewed about her schooling before she was admitted into “Beida”. She tells how her parents by chance got her into the highly ranked senior high school Hengshuizhongxue, where she experienced the three most competitive years of her life. Three years of intense training and an intensive learning curve. At the end of her three years of senior high school she ranked number 15 at her school and her test score was high enough to get her enrolled at Beijing university. She explains how she wouldn’t have had this opportunity if she had attended the senior high school of her hometown; a peer from her hometown who ranked number one at the local school took the test the same year, but her test score only allowed her to be enrolled at a second tier university in the south. So the schools have a huge influence on the student’s chances of getting into a good university, and there are Chinese parents who are willing to move to a different city if the school there is better and even set their career on standby to tutor their children before important tests (Hansen and Thøgersen 2008, 157).

The article “*Research on the teaching quality of compulsory education in China’s West rural schools*” published in 2009 and written by Wang Jiayi and Li Ying addresses this problem. They point out that “...there is a big gap between the quality of West rural and urban compulsory education, the quality of some grades of the rural primary schools has not achieved the basic requirement of the curriculum standards...” (Wang and Li 2009, p 66). In their research they have collected data of test scores from several schools in different western regions, and found a distinct correlation with the school grades and the regional level placement of the schools:

Table 10

Score comparison of grade five among different regions

	Number	Chinese				Mathematics			
		Mean score	Qualified rate	Rate of excellence	Standard deviation	Mean score	Qualified rate	Rate of excellence	Standard deviation
Village primary School	172	64.4	72.9	0	11.8	62.1	66.9	4.1	16.3
Town primary School	114	78.8	100	5.3	7.4	85.7	98.2	43.9	10.4
Local city primary school	107	72.8	85.0	2.8	12.2	80.3	89.7	36.4	16.2
Provincial capital primary school	106	88.8	100	56.1	6.2	85.1	95.3	38.7	11.1

Note: Full score of Chinese and mathematics is 100, standard for passing is 60, and standard for excellence is 90. Qualified rate and rate of excellence are both percent.

Source: Wang and Li 2009

The village primary schools are by far the lowest achievers in the research, with the lowest mean score, the lowest qualified rate and a high standard deviation. A high standard deviation is especially a bad sign when the mean score is low and the rate of excellence is 0 since it implies that some students are completely left behind. A similar chart was made for the junior high school students:

Table 11

	Chinese				Mathematics				English			
	Mean score	Qualified rate	Rate of excellence	Standard deviation	Mean score	Qualified rate	Rate of excellence	Standard deviation	Mean score	Qualified rate	Rate of excellence	Standard deviation
Village junior high school	87.1	42.1	0	13.4	72.0	24.7	0	22.6	46.9	3.2	0	18.1
Town junior high school	87.3	43.5	0	13.5	81.9	43.5	1.1	27.0	57.3	8.7	0	22.1
Local city junior high school	86.9	38.9	0	9.5	80.3	27.4	0	15.0	59.8	2.1	0	14.6
Provincial capital junior high school	91.8	49.5	0	12.8	91.2	46.2	1.1	20.1	82.7	29.7	0	17.6

Note: Full score of Chinese, mathematics, and English is 150, so standard for passing is  $\geq 90$ , and standard for excellence is  $\geq 135$ . Qualified rate and rate of excellence are both percent.

Source: Wang and Li 2009

The general levels of qualified rates are extremely low for all region levels of junior high schools. Even though the mean scores and qualified rates of the provincial capital junior high schools are very low they are still a lot better than those of the other region level schools. This survey gives a clear picture of the selection process in western China: even if you attend the best junior high school institution at your provincial capital, there is still a very high chance that you will not obtain an educational level which meets the national standards, let alone score enough points on your test to be admitted into a senior high school. So the rural population of West China has a large education gap compared with the western rural population, but the general level of compulsory education is very low for both segments. The survey only contains data from Western China, but this connection has been confirmed as a general rule by other authors (Xu 2009 and Wang 2011). Wang (2011) has made a survey mapping the background of the children attending the key high schools: in 1978 44.7% of the students were children of government officials, business executives and professional personnel, 12.4% were children of private owners in the business and service sector while 42.2% were children of workers, farmers and migrant workers. By 2008 the figures for the three strata had become 77.6%, 15.1% and 5.9% respectively. This clearly shows that education elitism is present and dominant at the junior high schools and the senior high school. The selection process for entering the well-funded universities starts long before the National Entrance Exam, as the training received in high school is indispensable for increasing the odds of getting a high score at the test.

## 6.1 Quality of rural teaching staff

Studies in West China have shown that teachers in rural primary schools are far less well educated than their urban peers (Wang and Li 2009). The compilation of highest educational background of the rural primary school teachers was as found to be 53.2% technical secondary schools, 29.1% senior high schools, 3.2% junior high schools and 14.5% junior colleges (ibid). The highest

education achieved for the teachers in towns and local cities was found to be technical secondary school for more than 70% of the total staff (ibid). For a comparison 51.9% of the primary school teachers of the provincial capital schools had obtained their highest degree from a junior college (ibid). So there is a clear connection between the educational level of the primary school teachers and the population density: the bigger the city the better the teacher. A similar relation was found in the junior high schools. Here the rural high school teachers' highest education consisted of 62.7% technical secondary school, 21.6% of junior college, 9.8% college and 5.9% of senior high school (ibid). In the provincial capitals the high school teacher's highest education was distributed as 66.0% of college education, 28.1% of junior college and 5.2 percent with a master's degree (ibid). Another survey analyzing the entire country has been made, but the data is from 2001:

**Table 12**

Comparison of full-time teachers' qualification between urban and rural areas, 2001

National average	South Central region		North China Plain region	West region
Proportion of qualified primary school teachers (%)	96.81	98.25	97.32	94.40
Urban areas	98.26	98.74	98.27	97.41
Rural areas	94.04	93.91	90.01	91.10
Proportions of primary school teachers with junior college degrees and above	27.40	32.47	27.31	21.18
Urban areas	40.94	44.38	41.36	34.20
Rural areas	16.25	18.20	12.67	10.58
Proportion of qualified junior secondary school teachers (%)	88.81	90.96	88.45	86.03
Urban areas	92.32	93.34	92.36	90.47
Rural areas	74.74	71.44	64.89	67.98
Proportions of junior secondary school teachers with university degrees and above	16.95	19.85	15.56	13.04
Urban areas	23.51	26.15	23.39	18.95
Rural areas	9.35	10.50	10.07	6.88

Source: Xu 2010

As shown in table 12, the proportion of qualified teachers is generally higher in the urban areas, and the gap of teacher qualifications is present in the entire country, though biggest in The West Region and North China Plain Region. It is also found that as much as 9.6% of the total teacher work force of rural China consists of temp-workers, and that 82.3% of the total temporary teacher work force is occupied in the rural districts (Xu 2010). Furthermore with reference to an article from 2006 Xu (2010) explains that around 32% of all the schools in the rural districts have experienced a teacher leaving in the middle of a term. It was also found that the teacher salary in Shanghai was three times higher than the teacher salary in the Henan rural area (ibid). The data in table 12 above

is somewhat old, and the exact proportions of qualified teachers may have changed somewhat over the years. The general trends do however persist, and this is confirmed in the article *Nóngcūn jiàoshī ná shénme liúzhù nǐ?* (农村教师 拿什么留住你? ) written by Fan Xianzuo in 2013. In the article Fan (2013) explains that the rural schools have a substantial lack of competent teacher staff, and that 50% of the school principals interviewed in the survey has experienced “teachers out-flux” - some schools even in such degree, that the institution is unable to keep up the regular daily teaching (ibid). Interviewees explain that the young teachers invited for job interviews most often doesn’t show up (ibid). Another problem is that a lot of resources are invested in the young better educated teachers, but they tend to leave for a better opportunity when they have become a vital part of the rural schools staff (ibid).

Fan (2013) explains that this problem is caused by the salary gap between rural and urban teachers, causing the rural teacher’s to abandon the rural schools for a better salary and better working conditions. Fan (2013) does not advice a general raise of the rural teacher’s fixed income, but suggests, that the achievement based bonuses should be enforced and reformed in order to motivate teachers to lift the general level of the students in the rural schools. The achievement based bonuses are calculated from the school children’s test scores.

The qualification gap persists and the general problem of teacher’s working on short terms and abandoning the positions continues and even seems to have grown. The cause of this problem is an income inequality between urban and rural teachers, which is caused by the unequal economic development of urban and rural districts.

## 7.0 Significance of family's income and background

The need of financial resources have been mentioned several times throughout this paper – both in regard of the local community in order to finance the schools, and in regard of the individual family in order to pay tuition fees and related expenses. Writing any chapter without mentioning the economy would be misleading as the question of funds soaks through every aspect of the Chinese education system, but the subject also needs a chapter of its own in order to achieve a sufficient quantitative analysis of the economy's impact on education opportunities.

### 7.1 Significance of Human capital

Luan (2010) has found a correlation between parent's education level and the opportunity of their children to obtain education. Luan (2010) explains that parents with high education will have greater expectations of their own children's education and are able to support and apply tutorship for their children. A similar observation can be found in Zhu's (2014) article *Nóngmíngōng zǐnǚ de jiā tíng jiàoyù wèntí* (农民工子女的家庭教育问题). Here it is stated that the children of migrant workers with a relatively high education will get more encouragement of taking education from their parents than children of uneducated migrant workers – in this case well educated is relative and is rarely beyond senior secondary education. Xu (2010) has pointed out that the correlation between parents' education and children's chances of obtaining education have been proved in almost every country of the world, and China is no exception: The father's but especially the mother's educational level have influence of the children's chances of academic success:

Table 13

Succession ratio according to mother's educational level					
Mother's educational level	Primary or lower	Junior high	Senior high	2-Year college or higher	Overall
Overall percent of mother's ed A%	65.6	22.9	9.5	2.0	100.0
Percent of mother's ed in sampling students B%	29.4	31.5	31.0	8.1	100.0
Succession ratio (B/A)	0.45	1.38	3.26	4.06	

Source: Xu 2010

This trend is confirmed by Luan (2010) who have constructed a regression analysis showing a correlation between supply and demand of education and the following factors: parents' education, parents' occupation, parents' financial assets, number of children in the household. The effect on demand will not be discussed in this paper. The regression showed a significant positive correlation between children's education supply and: 1) mothers' and fathers' education level, 2) non-agricultural income in the middle group, 3) father's occupation in management and service. Significant negative correlations were found between children's education supply and: parents' non-agricultural income in the low group, 2) father's occupation is farmer. Low income, low education level and farming as occupation are all general traits (with a certain variation) of the rural

population, and are all negative factors in Luan's (2010) regression. All abovementioned factors had a significance levels of 95% or higher.

It is thus statistically proven that the rural population has a large disadvantage of getting a university education due to the segment's general lower level of education, general lower level of income and frequent occupation with farming.

## 7.2 Significance of family's income

Once a student has graduated from junior high school all further schooling will be subject to tuition fees, and thereby putting a financial burden on the student's family. Besides the huge School selection fees mentioned in chapter 5.2 often surpassing 10,000 RMB, there are the regular senior high school tuition fee and book expenses. Attempts at finding official records of the size of the tuition fees have been unsuccessful, but this exact question has been asked on several Chinese online forums: on the threads of *19lou* and *eduu* netizens have written that the tuition fee is 630 -1,000 RMB per semester. Other fees are mentioned in these posts such as book fees of 250 RMB and a school selection fee of 24,000 RMB. Two annual fees of 1,000 RMB plus a book fee of 350 RMB will take up between 13.6% and 19.9% of an average rural family's total annual income of approximately 11,838 RMB.

The webpage EOL has made a comprehensive comparison chart of the tuition fees of the universities of all the provinces and municipals. The data in the chart is pulled from the respective universities of each province, and is thus reliable. Here most of the tuitions range from 3500 RMB to 5500 RMB per year, but there is a substantial variation in the tuition fees; the cheapest tuition of 500 RMB/year was found in Heilongjiang while the most expensive tuition of 43,000 RMB/year was found in Shanghai. On top of the tuition fee all the expenses of living away from home is added: EOL's chart shows that the annual dormitory fees ranges from 500RMB to 1500 RMB. Even with the cheapest dormitory found on the list and a modest tuition fee of 3500 RMB the expenses would eat up 33.8% of an average annual income of a rural household. In the newspaper article *Yī ge nóngjiā zǐdì de dàxué sì nián xiāofèi qīngdān(tú)* (一个农家子弟的大学四年消费清单(图)) published in *21Shìjì réncái bào•dàxué zhōukān* (21 世纪人才报·大学周刊) a rural student, who graduated in 2004 from Suzhou University department of social sciences, had counted every expense and found, that his four years of university studies had cost his family 59.605 RMB altogether – an annual expense well above the average annual income of a rural family.

So is the education worth its price? Wang and Liu (2011) have made a survey of the correlation between education level and income segmented between urban and rural citizens; in their survey they found that the urban citizens would get a higher income the more years of education they had received and the variation coefficient of their income would decline which signifies a lower risk of a low salary. The rural citizens on the other hand would also get a higher income the more years of education they had had, but a relatively weaker increase than the urban peers, and the variation coefficient would not decline but actually increase. So for the urban peers education is a solid way to ensure a high and stabile income – a sort of insurance, while for the rural peers, education is will raise your income, but not as much as the rural peoples and with a risk of a very low raise of income – a sort of lottery ticket. The prospects of investing the family fortune or borrow money for the child to get an education which may never pay back the investment, may very well prevent some rural families from sending their child to school.

## 8.0 Conclusion

**Substantial disparities in opportunity of obtaining higher education exist between the rural and the urban population. The rural population is severely disadvantaged compared to the urban population – both regarding quantity and quality of education. The main reason for the disparity in education opportunity is the disparity in economic development between the cities and the countryside.**

A high household income and a well-educated family are very important factors for increasing the opportunities of obtaining higher education, and by the general traits of lower income and lower educational background than the urban population, the rural population has a substantial disadvantage in the struggle of obtaining higher education. The rural population has a somewhat broad access to higher education and the proportion of rural students attending university is increasing - but only at second and third tier institutions, and seen as a whole the segment is still underrepresented compared to the urban population. The vast majority of the students at the prestigious 985 universities and 211 universities are from urban households even though the number of applicants from rural households exceeds the urban applicants.

Due a national policy of regional self-sufficiency and local funding of local affairs, the quality of schools varies with the local economy. Economic well-developed cities and counties enjoy well-funded schools with modern facilities and competent teachers, while poor counties and villages have to make ends meet with inferior equipment and staff. The children attending village schools score way lower on their tests compared to children of city schools and especially children attending schools in the provincial capitals.

The teachers of village schools are less educated than the teachers of city schools and provincial capital schools. Many villages experience an outflow of the skilled teachers, as they take on jobs in the city, where the salary is higher and the working conditions better. This difference of quality between the schools causes a test score gap and a knowledge gap between the rural and the urban children, and thus gives the urban children the advantage when taking the entrance exam for senior high school, and it gives the urban children a better foundation of knowledge to build on when continuing at senior high school, which once more gives the urban children the upper hand when taking the National College Entrance Exam and applying for university.

China's supply of senior high schools is considerably lower than the demand, creating massive bottlenecks and fierce competition for the enrollment. The short supply and high demand of schooling have caused an increased proportion of admittance by paying school selection fees. School selection fees of more than ten or twenty thousand RMB are not uncommon, leaving rural poor families out of the competition.

The provincial admission quotas favor the economic well-developed provinces and municipals, which causes an unequal competition of admittance between the wealthy urbanized provinces/municipals and the poor provinces with a high proportion of rural inhabitants. It is especially at the prestigious 985/211 universities that the quotas favor the highly urbanized provinces/municipals, making it very difficult for rural students to enter the high quality universities.

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Appendix I

Soruces: Educational Statistics Yearbook of China 2010 page 624-625 and China Population and Employment Statistics Yearbook 2010 page 35

Region	Total Education Expenditure (10.000 RMB)	Government Appropriation for Education (10.000 RMB)	Budgetary Educational Funds	Income from Teaching Research and Other Auxiliary Activity (10.000RMB)	Tuition (10.000)	Poor-Western (Dummy-variable)	Proportion of rural population (%)	Population (10.000)	Education Expenditure per capita RMB	Tuitions proportion of total expenditure (%)
Beijing	5,289,432	4,332,698	4,006,230	757,151	503,559	0.00	15.00	1,755	3,014	9.52
Shanghai	4,937,339	3,825,305	3,395,283	824,593	688,345	0.00	11.40	1921	2,570	13.94
Tibet	597,448	577,399	576,051	15,087	11,790	1.00	76.20	290	2,060	1.97
Tianjin	2,381,672	1,803,943	1,677,781	505,972	359,736	0.00	21.99	1,228	1,939	15.10
Zhejiang	8,911,507	5,947,216	4,998,283	2,133,499	1,544,936	0.00	42.10	5180	1,720	17.34
Jiangsu	11,054,890	7,402,067	6,548,470	2,852,163	1,946,810	0.00	44.40	7725	1,431	17.61
Qinghai	785,820	727,966	705,758	45,219	30,159	1.00	58.10	557	1,411	3.84
Xinjiang	2,959,264	2,592,025	2,470,005	299,385	208,225	1.00	60.15	2,159	1,371	7.04
Hainan	1,175,474	905,860	811,612	213,024	159,035	0.00	50.87	864	1,361	13.53
Guangdong	12,843,085	9,071,029	8,554,350	3,223,522	2,394,395	0.00	36.60	9638	1,333	18.64
Inner Mongolia	3,187,733	2,692,816	2,498,568	429,547	334,691	0.00	46.60	2422	1,316	10.50
Ningxia	813,071	677,505	648,255	90,061	68,689	1.00	53.90	625	1,301	8.45
Liaoning	5,349,184	4,143,772	3,790,891	1,030,190	837,912	0.00	39.65	4319	1,239	15.66
Fujian	4,479,126	3,255,728	3,014,545	1,007,403	734,334	0.00	48.60	3627	1,235	16.39
Shaanxi	4,637,457	3,410,574	3,250,003	1,054,918	844,400	0.00	56.50	3772	1,229	18.21
Chongqing	3,309,977	2,324,549	2,195,528	672,950	463,283	0.00	48.41	2859	1,158	14.00
Shanxi	3,809,096	2,977,295	2,694,752	751,428	602,479	0.00	54.01	3427	1,111	15.82
Jilin	3,006,988	2,375,058	2,275,202	591,920	468,580	0.00	46.68	2740	1,097	15.58
Gansu	2,761,110	2,359,726	2,286,210	351,007	282,441	0.00	67.35	2635	1,048	10.23
Sichuan	8,088,479	6,105,391	5,820,461	1,510,993	897,783	1.00	61.30	8185	988	11.10
Yunnan	4,408,081	3,723,686	3,596,527	563,675	429,141	1.00	66.00	4571	964	9.74
Heilongjiang	3,486,163	2,761,967	2,596,720	701,669	598,105	0.00	44.50	3826	911	17.16
Hubei	5,194,495	3,407,313	3,180,674	1,515,403	1,127,650	0.00	54.00	5720	908	21.71
Shandong	8,397,429	6,364,782	5,676,783	1,816,673	1,379,027	0.00	51.68	9470	887	16.42
Hunan	5,660,684	4,031,176	3,779,431	1,402,601	1,068,199	0.00	56.80	6406	884	18.87
Hebei	6,145,261	4,692,123	4,345,828	1,250,708	1,030,697	0.00	57.00	7034	874	16.77
Jiangxi	3,776,516	2,706,434	2,589,592	919,367	747,262	0.00	56.82	4432	852	19.79
Guizhou	3,094,113	2,680,258	2,557,255	358,393	260,951	1.00	70.11	3798	815	8.43
Henan	7,633,496	5,869,145	5,626,470	1,555,511	1,194,810	0.00	62.30	9487	805	15.65
Guangxi	3,873,253	3,051,449	2,921,498	739,500	570,102	0.00	60.80	4856	798	14.72
Anhui	4,873,316	3,596,935	3,387,147	1,101,215	833,179	0.00	57.90	6131	795	17.10

## HOVEDTAL FRA REGRESSIONSANALYSEN

## KVADREREDE KORRELATIONER

	Y	X1	X2	X3
Y	1	0.039229	0.467332	1E-06
X1	0.0392	1	0.112086	0.43864
X2	0.4673	0.112086	1	0.23017
X3	1E-06	0.438641	0.230165	1

## KORRELATIONER

	Y	X1	X2	X3
Y	1	0.198062	-0.683617	0.00114
X1	0.1981	1	0.334793	0.6623
X2	-0.6836	0.334793	1	0.47976
X3	0.0011	0.662299	0.479756	1

Responsvariabel: Y

R-kvadreret	0.688494	(Determinationskoefficient)
Justeret R-kvadreret	0.653882	
Standardafvigelse	306.303237	Varians = 93821,67282
Observationer	31	

## KVADRATSUMMER OG F-TEST

	Frihedsgrader	Kvadratsum	F-værdi	p-værdi(ss)
Regression	3	5598873.188	19.891897	~ 0
Residual	27	2533185.166		
I alt (SAKy)	30	8132058.355		

## KOEFFICIENTTESTS

	Koefficienter	t-stat	p-værdi(ss) tosidet	værdi(ε) ensidet	H1 tosidet	H1 ensidet
Skæring	747.469857	0.942757	0.354165	0.18	$b_0 \neq 0$	$b_0 > 0$
Proportion of Government appropriation (X1)	2695.909007	2.640879	0.013579	0.01	$b_1 \neq 0$	$b_1 > 0$
Proportion of rural population (X2)	-31.923564	-7.325624	~ 0	~ 0	$b_2 \neq 0$	$b_2 < 0$
Poor Western (Dummy variable) (X3)	221.357879	1.173289	0.250927	0.13	$b_3 \neq 0$	$b_3 > 0$

**Appendix II, Sources: China Statistical Yearbook 2011 table 10.15 and 10.22**

	Urban (RMB)	Rural (RMB)	Urban-rural ratio
National average	<b>21,033</b>	<b>5,919</b>	<b>3.55</b>
Beijing	33,360	13,262	2.52
Tianjin	26,942	10,075	2.67
Hebei	17,334	5,958	2.91
Shandong	16,893	4,736	3.57
Inner Mongolia	19,014	5,530	3.44
Liaoning	20,015	6,908	2.90
Jilin	16,794	6,237	2.69
Heilongjiang	15,096	6,211	2.43
Shanghai	35,739	13,978	2.56
Jiangsu	25,115	9,118	2.75
Zhejiang	30,135	11,303	2.67
Anhui	17,627	5,285	3.34
Fujian	24,150	7,427	3.25
Jiangxi	16,558	5,789	2.86
Shandong	21,737	6,990	3.11
Henan	17,142	5,524	3.10
Hubei	17,573	5,832	3.01
Hunan	17,657	5,622	3.14
Guangdong	26,897	7,890	3.41
Guangxi	18,742	4,543	4.13
Hainan	16,930	5,275	3.21
Chongqing	18,991	5,277	3.60
Sichuan	17,129	5,087	3.37
Guizhou	15,139	3,472	4.36
Yunnan	17,479	3,952	4.42
Tibet	16,539	4,139	4.00
Shaanxi	17,065	4,105	4.16
Gansu	14,307	3,425	4.18
Qinghai	15,481	3,863	4.01
Ningxia	17,537	4,675	3.75
Xinjiang	15,422	4,643	3.32

