



The University of
Nottingham
China Policy Institute

Discussion Paper 34

**THE IMPACT OF HIGHER EDUCATION EXPANSION ON
SOCIAL JUSTICE IN CHINA:
A SPATIAL AND INTERTEMPORAL ANALYSIS**

Shujie YAO

Bin WU

Fang SU

September 2008

China House
School of Contemporary Chinese Studies
International House
University of Nottingham Jubilee Campus
Wollaton Road
Nottingham, NG8 1BB
Tel: +44 (0)115 846 7769
Fax: +44 (0)115 846 6324
Email: CPI@nottingham.ac.uk
Website: www.chinapolicyinstitute.org

The China Policy Institute, part of the School of Contemporary Chinese Studies at The University of Nottingham, was set up to analyse critical policy challenges faced by China in its rapid development. Its goals are to help expand the knowledge and understanding of contemporary China in Britain, Europe and worldwide, to help build a more informed dialogue between China and the UK and Europe, and to contribute to government and business strategies.

**The Impact of Higher Education Expansion on Social Justice in China:
A Spatial and Inter-temporal Analysis**

Shujie Yao, Bin Wu and Fang Su

School of Contemporary Chinese Studies
University of Nottingham

ABSTRACT: Higher education (HE) in China has been transformed from elite to mass education over the last decade due to commercialisation and funding reform. Many questions have been raised regarding the impact of HE expansion on social justice: what are the implications of the distribution of HE resources on regional inequality? How does it influence different social groups in terms of access to HE? What are the financial implications on different regions and social groups as a result of the funding reform? Based on the official data by region in 1998 and 2006, this paper aims to address these questions and describe how HE has changed over time, both spatially and inter-temporally. Our research results suggest that HE reforms have disadvantaged poor people in impoverished regions despite the availability of HE opportunities for them.

JEL: D63, I23, N35

Key Words: Higher Education, Social Justice, China

1. Introduction

Since the late 1990s, higher education (HE) in China has developed rapidly. The number of new entrants to higher education institutions (HEIs) increased from 2 million in 1997 to 7.3 million in 2006. The gross enrolment rate (GER) rose from 7% to 22% in the same period. It is predicted that this trend will continue and by 2010, the GER will reach 25%.

Increased access to HE may not necessarily improve social justice for three reasons. First, HE expansion coincided with increasing economic and social inequality. The Gini coefficient which measures income inequality increased from 0.39 in 1998 to 0.45 in 2006 (Xing, 2006). The expansion of HE and rising inequality have caused serious concern as to whether the redistribution of HE resources and opportunities has adversely affected regional and inter-group equality and social justice.

Second, HE expansion was associated with a sudden change in public funding, from a model supported by three different government authorities (the Ministry of Education, other central ministries and regional governments) to a co-funding model supported by students and in most cases their parents, the Ministry of Education representing the central government (to fund only 107 national key universities) and local governments to be responsible for supporting all non-key universities (Huang, 2005). As key universities in China are concentrated in big cities and some rich provinces, and central ministries other than the Ministry of Education are no longer financing any HEIs, the change in public funding must have disadvantaged poorer prospective students from less affluent regions.

Whilst well-off urban families are able to afford tuition fees for their children, low-income rural and urban families, especially those in inland areas, cannot afford to support their children to study in universities and colleges. High university fees have become a real deterrent to poor families, whereas relatively more opportunities are available to wealthy families, especially those from big cities where entry requirements are significantly lower for local residents than for those outside the cities, giving the former social group unfair access to HE.

Third, the extent of HE expansion raises a serious question about the quality and employability of graduates. Due to urban unemployment and social discrimination, HE graduates from some universities are less successful in the labour market (Yang, 2006). As poor children are less likely to study in prestigious universities, they suffer further discrimination upon graduation.

The purpose of this paper is to examine the impact of HE expansion on different regions and social groups by analysing the profiles of two cohorts of university graduates enrolled in 1998 and 2006. In particular, we will address the following questions: what are the implications of HE resource distribution on regional inequality? How does it influence different social groups in terms of access to HE? What are the financial implications of funding reform on different regions and social groups?

The rest of this paper is organised as follows. Section 2 provides a review of the literature on HE expansion and social justice. Section 3 describes the research methodologies and data collection, and also offers a detailed analysis. Section 4 focuses on the geographical redistribution of HE resources and opportunities. Section 5 studies the impact of HE expansion on disadvantaged social groups. Section 6 analyses the unequal access to national key universities. The concluding section summarises the major findings and makes policy recommendations.

2. Literature on HE expansion and social justice

From 1949 to the late 1970s, China's HE was based on the former USSR model. All HE relevant resources were controlled by the state and only 5% of senior high school students could be enrolled to HEIs. To balance HE resources inter-regionally, many universities were moved from the eastern to the western region (Kang, 2004). Students who were entirely financed by the state automatically became employees of government agencies or state-owned enterprises after graduation (Wu, 2008).

Despite the gradual introduction of education reform, elitism dominated HE till the late 1990s. Since then, rapid changes have taken place. In the course of one decade of fast expansion supported by dramatic changes in the administration system and funding mechanism, Chinese HE effected a transition from elite to mass higher education. According to Wu and Zheng (2008), the first radical reform in the late 1990s was the commercialisation of HE which led to the emergence of a co-funding model to replace the former funding regime previously supported by the government. Under the co-funding model, students are required to pay tuition fees (from 1999 onward) although those from poor families are entitled to have a certain amount in student loans.

The second reform was the decentralisation of HE so that all central ministries, apart from the Ministry of Education, relinquished their control and ownership of all HEIs under their authority to provincial governments where these HEIs were located. After decentralisation, HEIs have been divided into two major groups based on their funding models and ownership. The first group includes the national key universities which are centrally funded by the Ministry of Education. This is a small group which consists of 107 universities, or the '211' universities designated as research-oriented key universities so that they become internationally competitive. The HEIs in the second group are all entirely funded and owned by provincial governments.

The third reform set up new university campuses of existing universities in different locations in order to increase enrolment. A further reform introduced non-state owned or private HEIs which provide more opportunities for students from different backgrounds (Wu, 2008). Adult HE programmes, short-cycle and normal (teacher-training) courses are also offered at the bachelors, masters and doctoral levels that were previously limited to regular HEIs.

Before decentralisation, universities were divided into three main groups according to their ownership. The first group had 36 universities owned and controlled by the Ministry of Education. The second group had about 100 universities and HE colleges that were controlled and owned by other central ministries. The third group had over 800 universities (and HE colleges) controlled and owned by local governments at provincial and city levels (Li, 1996).

From the late 1990s, rapid economic development in China has resulted in a rising demand for HE because the labour market, which aims to improve people's living conditions requires more and more university graduates (Yang, 2004). This rising demand for HE could not be entirely supported by central and local governments. As a result, some scholars, including Ming Tang, an economist of the Asian Development Bank Mission in China, gave advice to the government on how to expand HE enrolment. Tang suggested that HE expansion not only encourages families to spend their savings on HE, but also stimulates investment in HE-related services industries (Zheng, 2006). Tang also suggested that the employment age of school graduates should be increased to alleviate employment pressure (Wei and Li, 2000).

From a national perspective, Lanqing Li, the vice premier in charge of education, emphasised two reasons for HE expansion and commercialisation, namely the need for more talented personnel to sustain China's rapid economic development, and state's obligation to meet the increasing public demand for HE (Wei and Li, 2000). In June 1999, the Chinese government launched a new policy to expand HE enrolment as a national strategy to improve the overall human resource capacity of the country.

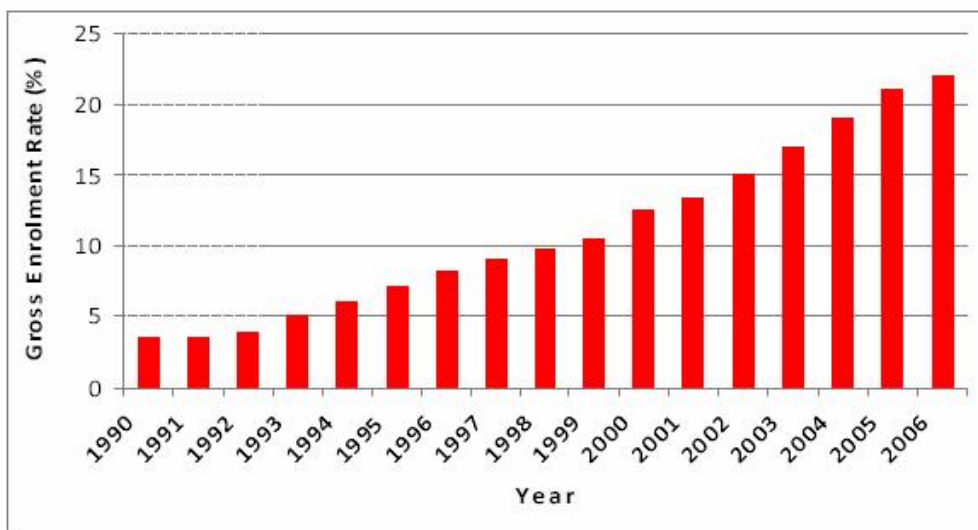
Many empirical studies suggest that HE expansion is a necessary condition for fast economic growth as HE can improve labour skills and productivity (Wan, 2006). Hannum and Buchman (2003) summarise the impact of HE expansion on economic and social development as the following three points:

- It contributes to national economic growth, since better-educated workers create more production.
- It narrows social inequalities by promoting social mobility.
- It promotes the development of a more democratic society.

The famous education expert Martin Trow (1972) divides HE development into three stages: Elitism, followed by Mass and then Universal education, a specialisation which has been widely accepted by educationists around the world. In his theory, the most crucial indicator of the three different HE developments is Gross Enrolment Rate (GER), which refers to the share of 18-22 years olds enrolled in full-time HE as a proportion of the total population in that age group. The cut-off points between each stage are below 15%, between 15%-50%, and over 50% respectively. Many developed countries have achieved a Universal HE level, e.g. the US and Germany (Tsang, 2000).

As shown in Figure 1, China's GER increased nearly five times from 1990 to 2006. The GER before 1996 was consistently lower than 7%. By 2006, it reached 22%, implying that HE in China was transformed from elitism to mass education (Li and Min, 2001).

Figure 1: Growth of gross enrolment rate of HE in China (%)



Source: Wu and Zheng (2008).

The substantial increase in GER has created more HE opportunities for school children but it has been accompanied with some tough challenges, conflicts and problems

(Zhang, 2000). According to a research conducted by the Higher Education Research Institute at the Beijing University of Science and Technology, the increased number of enrolled students from urban areas is more than that of their rural counterparts. For instance, in 1999, the increased number of urban students who registered for the university entrance examination was four times the number of rural students (Wan, 2006). The report of the Chinese National Commission for UNESCO in 2004 stated that there was a big discrepancy in education expansion between different regions, due to historical, natural, regional and other factors. The western region is particularly disadvantaged compared to the eastern region due to the significant differences between their economic, education and other infrastructure conditions. In addition, the ownership reform of HEIs has exacerbated inter-regional disparity of access to HE (King-Lun, 2005).

The same study also revealed that students from different social backgrounds tend to study in different types of HEIs. For example, urban students are far more likely to enter national key universities than their rural counterparts as urban families tend to have better cultural, economic and social capital than rural families, enabling them to provide better pre-university education to their children and to gain easier access to key universities. In contrast, students from rural or disadvantaged urban families tend to send their children to provincial or local HE institutions which are relatively poorly staffed and equipped compared to national key universities (Wan, 2006).

Based on the theory of Maximally Maintained Inequality, Raftery and Hout (1993) argue that students from advantaged groups are better equipped to make the most of enrolment expansion, as HE expansion widens the gaps between advantaged and disadvantaged classes. Compared to the disadvantaged groups, the advantaged groups are more able and determined to gain access to HE because they are more able to afford tuition fees. Consequently, enrolment expansion increases the disparity between different classes not only for the present generation but also for the future generations (Wan, 2006).

Whether a cost-sharing system ought to be introduced in Chinese HE has been debated. The theory of individual and social return of HE can be employed to justify this (Li and Min, 2001; Li, 2003). University education used to be free but since the early 1990s, tuition fees were introduced in a number of selected colleges and universities. By 1997, most HEIs have imposed tuition fees. Since then, the share of government contribution to HE finances has declined gradually, pushing HEIs to rely more and more on tuition fees (Wan, 2006).

The increasing dependence of HE expansion on tuition fees has important social and economic implications, especially on social justice and equality. Based on a study of 10 Chinese universities, Jacob (2006) presents the following findings relating to social justice and equality in the Chinese HE system:

- The results of university entrance examinations cannot adequately reflect students' talents, gifts and ethics. As a result, the examination system is not entirely equitable.
- Access opportunities are inequitable because of the diverse quality and development of fundamental educational levels in different geographic regions.
- Making HE more equitable requires special financial assistance to applicants from rural regions and poor urban households.
- Another common discrimination against students from rural regions is the poor quality of their schools, teaching, and facilities, etc.

Based on the GER, the most widely used measurement of HE expansion, some scholars have argued that the expansion of HE has created more opportunities and accelerated the transition from elitism to mass education in China. Others argue that expansion has aggravated regional disparity and unfair competition for HE places. Very few realise the importance of analysing the impact of China's HE expansion on social justice to students and their families from a comprehensive and long-term perspective of development. In addition, a suitable regional division in the HE sector is important for our initial analysis of resource redistribution. Therefore, relevant data was systematically collected at regional, provincial and national levels.

3. Methodologies

It is not easy to assess the impact of HE expansion on social justice unless there is a clear definition of social justice. In this paper, social justice is defined as *equal opportunity for all people to get access to and benefit from higher education*. This broad definition is explained in more detail as below:

- Social justice refers to equal opportunity to all families, social groups and classes without any favour or discrimination to any social group benefiting from HE expansion. In other words, social justice emphasises inter-group equality.
- Increased access by less developed regions and poor groups to HE is an important indicator of improvement in social justice. As commercialisation is the key to HE expansion, it is necessary to analyse the impact of increased tuition fees and reduced public funding to HE on different social groups.
- Achieving access to HE is not viewed in isolation but as a means for all attendants to build up a sound base for employment and career development. Whether they can benefit equally from HE is an important element for measuring social justice. The quality of HEIs is important as it influences the prominence of social groups and their career development opportunities. As a result, access to HEIs should be measured in both quantity and quality terms when social justice is evaluated.

Based on this definition, this paper will assess the impact of HE expansion through a systematic collection and analysis of official statistics and secondary information. Two cohorts of HE recruitments in 1998 and 2006 were used to examine the consequences and impact of HE expansion. A relationship is shown between the HE information and local economic and social development indicators including GDP, urbanisation, urban/rural incomes, trade and investment, etc. In particular, the following factors are studied in detail: geographical location, social groups, and the nature of HEIs.

The impact of HE expansion can be analysed by comparing changes in access to HE across different provinces and cities. The basic unit of data collection and analysis is province (and provincial level city), where several geographical zones were used to display results from a social justice perspective. Due to lack of detailed data for the age group between 18-22, the new entrant rate, i.e. the number of HE entrants per 10,000 people, was taken as a key indicator to measure access to HE.

In addition to the geographical factor, different social groups may fare differently in getting access to and benefiting from HE expansion. This is particularly true for rural people who have much lower incomes than urban people. The introduction of tuition fees must have burdened rural people much more than their urban counterparts. In addition, social discrimination and urban biases in public funding in secondary education also work against rural families. This paper will discuss the extent to which HE expansion policies have had a discriminative effect on rural households.

Furthermore, it would be misleading to assume that all HEIs are similar in terms of resource allocation and teaching quality. HE expansion has resulted in a redistribution of HE resources and students between regular and adult HEIs (Wu and Zheng, 2008). For the purpose of this paper, we limit information collection and analysis to regular HEIs, the mainstream of China's HE sector. Focusing on new graduates from regular HEIs, it has been widely reported that the quality of HEIs is a key factor influencing graduates' employability. Graduates from national key universities have distinct advantages in the labour market over those from local universities (Wan, 2006). Variation in ability to gain access to national key HEIs listed in the national '985' or '211' programmes is an important indicator in measuring social justice.

Students from national key universities are more likely to find jobs (and indeed, better-paid jobs) than those from non-key universities (Yang, 2006). Some argue that the tension in the labour market is not caused by oversupply of graduates, but by uneven distribution of well-paid jobs that are highly concentrated in big cities and prosperous provinces along the eastern coast. Consequently, underdeveloped regions experience serious shortage of human capital, such as qualified technical and professional workers. In the meantime, the supply of graduates greatly exceeds demand in major cities and coastal provinces (Wan, 2006). This 'structural' unemployment and shortage of qualified workers can be traced, to a certain extent, to the current HE system and unequal distribution of HE resources across regions.

4. Overview of HE resource redistribution

The distribution of HE resources, regular HEIs and enrolled students in 1998 and 2006 are presented in Table 1. Several conclusions can be drawn from the data. First, HE resources are unevenly distributed across the regions. Large provinces in terms of population do not necessarily have more HEIs. In general, coastal provinces (e.g. Jiangsu, Shandong and Guangdong) have more HEIs than inland provinces (e.g. Henan, Sichuan).

Second, geographical distribution of HEIs has some impact on access to HE. One good example is to compare Shandong with Henan. They had a similar population of 93 million in 2006 but different university student enrolments. Shandong enrolled 1.34 million students but Henan 0.97 million. In terms of enrolment rate, Shandong had 144 students in comparison with Henan's 104 students per 10,000 people.

Third, HEIs can recruit students across geographical boundaries. Otherwise, it is difficult to explain why Tianjin has a higher enrolment rate than Shanghai. Of many factors influencing access to HE, urbanisation is important, as demonstrated by the high enrolment rates in Beijing, Tianjin and Shanghai.

Finally, with respect to government funding, Table 1 lists the '211' programme universities, or national key universities. Of the total 107 universities, Beijing has 23, followed by Jiangsu 11 and Shanghai 10. Tianjin has only 3. The uneven distribution of '211' universities is a good indication of the uneven distribution of public HE resources across regions.

Table 1 Distribution of HE resources and students in China (2006)

Provinces	Population	HEIs	211 List	Enrolments	Enrolment rate
	million	Number	Number	In 1,000	Per 10,000
Beijing	15.81	80	23	566	358
Tianjin	10.75	45	3	357	332
Hebei	68.98	88	1	863	125
Shanxi	33.75	56	1	446	132
In. Mongolia	23.97	37	1	253	106
Liaoning	42.71	78	4	721	169
Jilin	27.23	45	3	435	160
Heilongjiang	38.23	65	4	592	155
Shanghai	18.15	60	10	466	257
Jiangsu	75.5	116	11	1306	173
Zhejiang	49.8	68	1	720	145
Anhui	61.1	83	3	664	109
Fujian	35.58	63	2	461	130
Jiangxi	43.39	66	1	771	178
Shandong	93.09	108	3	1338	144
Henan	93.92	84	1	974	104
Hubei	56.93	86	7	1092	192
Hunan	63.42	96	4	830	131
Guangdong	93.04	105	5	1009	108
Guangxi	47.19	55	1	387	82
Hainan	8.36	15	0	90	108
Chongqing	28.08	38	2	376	134
Sichuan	81.69	74	5	861	105
Guizhou	37.57	36	1	222	59
Yunnan	44.83	50	1	284	63
Tibet	2.81	6	0	23	83
Shaanxi	37.35	76	7	726	194
Gansu	26.06	33	1	264	101
Qinghai	5.48	11	0	36	66
Ningxia	6.04	13	0	56	93
Xinjiang	20.5	31	1	199	97
Total	1291.31	1896	107	17,388	142

Source: National Bureau of Statistics (2007), *China Statistics Yearbook*.

Uneven distribution of public HE resources is closely associated with uneven economic and social development. For simplicity, all provinces and cities (Beijing, Shanghai, Tianjin and Chongqing) in the rest of this paper will be grouped into four categories: East, Central, West and Municipals (Beijing and Shanghai only).¹

¹ The Eastern region includes Liaoning, Tianjin, Shandong, Hebei, Jiangsu, Zhejiang, Fujian and Guangdong. The Central region includes Heilongjiang, Jilin, Shanxi, Henan, Anhui, Hubei, Hunan and Jiangxi. The

Table 2 provides baseline information and shows the distribution of HE resources and students. A comparison of regional compositions of population and GDP illustrates the uneven distribution of HEIs, full-time teachers and government education funds against student enrolment. For instance, Beijing and Shanghai share only 2.6% of the national population and 7.6% of the national GDP, but they recruit 5.9% of the country's HE students, have 7.5% of HEIs, 7.9% of HEI teachers, and 11.8% of funding from the central government.

Table 2 Composition of HE resources and students by region (% of national total, 2006)

Region	Provinces (number)	Popn. (%)	GDP (%)	Urban rate (%)	HEIs (%)	Teachers (%)	Students (%)	State funds (%)
East	9	37.0	51.8	53.9	36.7	38.0	39.5	41.7
Centre	8	32.4	23.2	42.5	31.1	31.9	33.4	23.6
West	12	28.0	17.1	36.7	24.6	22.2	21.2	22.9
Municipals	2	2.6	7.9	86.5	7.5	7.9	5.9	11.8
Total	31	100	100	46.4	100	100	100	100

Notes: Government funding is not limited to HE but all sectors including primary and secondary education. See footnote 1 for regional definitions.

Source: All data were derived from China's official statistical data online at <http://www.moe.gov.cn/>.

Over the last decade, there was a more balanced growth in the number of HEIs across regions. The number of HEIs in the Municipals increased 1.36 times between 1998 and 2006 compared with the growth rate of more than 1.8 times in other regions. As for the number of full-time teachers, the East had the highest, but the Municipals the lowest growth among all regions.

Table 3 Growth and distribution of HE resources by region

Regions	1998 (number)		2006 (number)		2006/1998 (ratio)	
	HEIs	Teachers	HEIs	Teachers	HEIs	Teachers
East	351	136,372	686	408,433	1.95	2.99
Centre	319	120,570	581	343,082	1.82	2.85
West	249	93,681	460	239,043	1.85	2.55
Municipals	103	56,630	140	85,431	1.36	1.51
Total	1022	407,253	1867	1,075,989	1.83	2.64

Notes: See footnote 1 for regional definitions.

Source: All data were derived from China's official statistical data online at <http://www.moe.gov.cn/>.

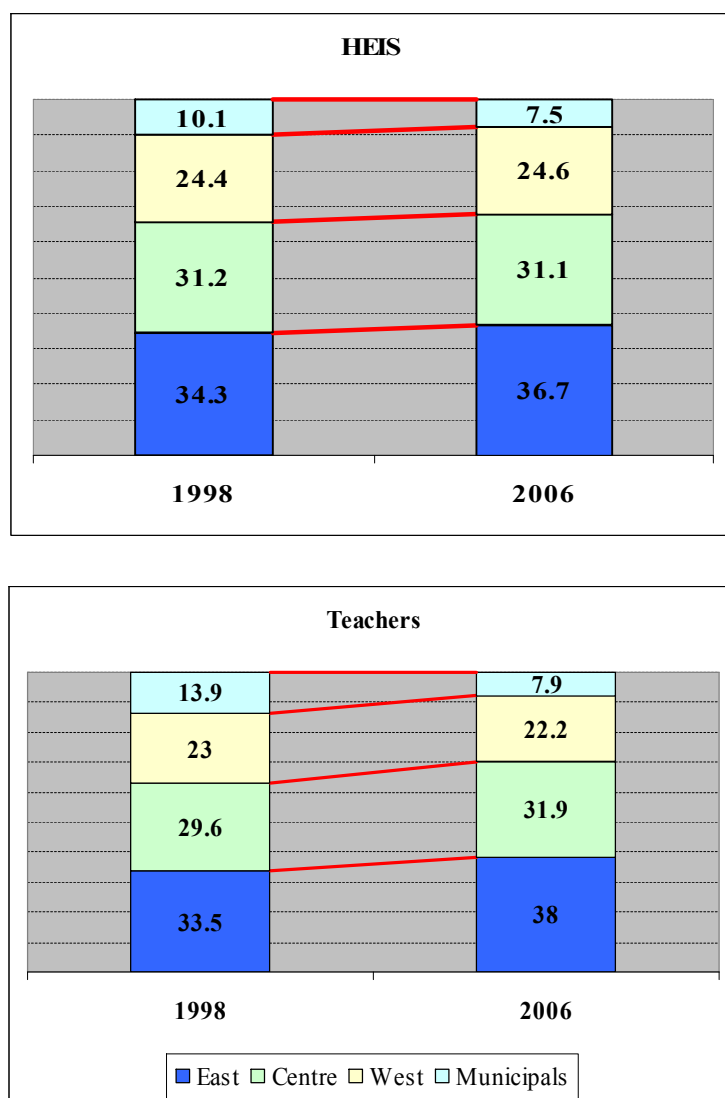
Regional differences in the growth of HEIs and HE teachers imply a shift of HE resources from Beijing and Shanghai to the rest of the country, and a shift from inland

Western region includes Xinjiang, Inner Mongolia, Ningxia, Shaanxi, Qinghai, Gansu, Tibet, Sichuan, Congqing, Yunnan, Guizhou and Guangxi. Municipals include Beijing and Shanghai.

provinces (West and Centre) to coastal provinces (East). The first shift had a positive effect on regional balance but the second shift had an opposite effect.

Figure 2 illustrates the change in the regional composition of HEIs and teachers between 1998 and 2006. The share of HEIs accounted for by the East in the national total increased from 34.3% to 36.7% compared to a slight decline in the share accounted for by the Municipals, whilst an unchanged share is attributed to the Central and Western regions. As for the number of teachers, both the East and Central regions increased their shares in the national total. This resulted in a big fall in the share of teachers accounted for by the Municipals from 13.9% to 7.9%. The West also experienced a decline in its share of teachers.

Figure 2 Change of regional composition of HE resources



Sources: All data were from China's official statistical data online at <http://www.moe.gov.cn/>.

5. Change of access to HE

Table 4 shows a five-fold increase of new entrants at the national level between 1998 and 2006. There were no significant differences in the growth of new entrants between regions except in the Municipals where the growth was half of that in other regions.

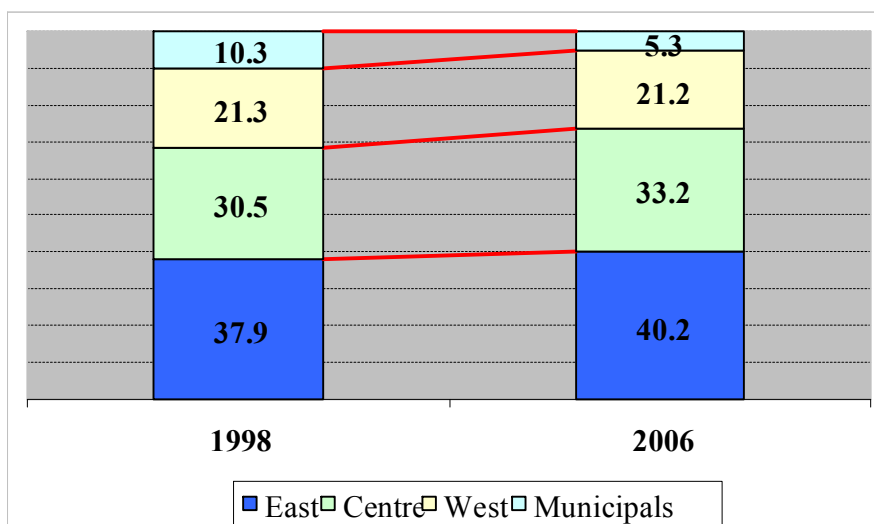
Table 4 Growth of new HE entrants by region

Region	1998 ('000)	2006 ('000)	2006/1998 (ratio)
East	411	2,195	5.3
Centre	331	1,813	5.5
West	231	1,160	5.0
Municipals	111	292	2.6
Total	1,084	5,461	5.0

Sources: All data were from China's official statistical data online at <http://www.moe.gov.cn/>.

With respect to the regional composition of new entrants, Figure 3 shows that the shares accounted for by the East and Central regions increased significantly, while the share accounted for by the Municipals declined by almost a half from 10.3% to 5.3%. The share accounted for by the West remained more or less unchanged.

Figure 3 Adjustment of regional composition of new entrants



Source: All data were derived from China's official statistical data online at <http://www.moe.gov.cn/> and were calculated by the authors.

From a quantity perspective, the expansion of HE resulted in a significant shift from Beijing and Shanghai to the Eastern region, and to a lesser extent, to the Central region. The West region did not benefit much from the redistribution of resources and hence remained the most disadvantaged region.

In conclusion, Table 5 shows that all regions experienced a large improvement in enrolment rates between 1998 and 2006. At the national level, the enrolment rate rose from 34 to 142 per 10,000 people in 8 years. This resulted in a reduced difference between the rise in the Municipals and the national average rise from 4.17 times to 2.17 times. Compared with the East and Central regions, however, the West is only 70% of the national average in 2006, albeit representing an improvement from 61% of the national average in 1998. This indicates clearly that access to HE in the West is still far more difficult than in other regions.

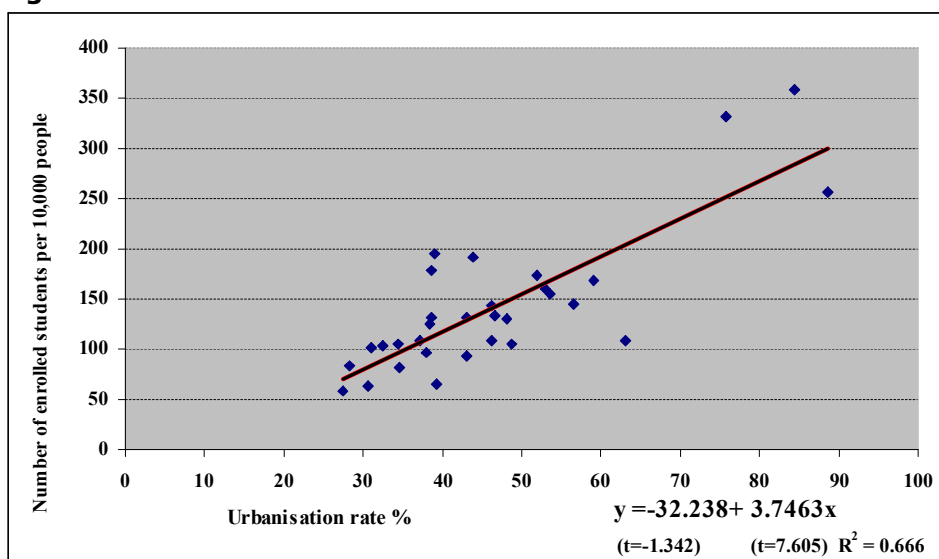
Table 5 Change of new entrants by region and year

Region	1998		2006	
	Entry rate Per 10,000	Region/Nation %	Entry rate Per 10,000	Region/Nation %
East	33.9	99.7	159.3	112.4
Centre	27.1	79.7	144.9	102.3
West	20.7	60.8	98.6	69.6
Municipals	141.9	417.6	307.4	217.0
National	34.0	100	141.7	100.0

Source: All data were derived from China's official statistical data online at <http://www.moe.gov.cn/> and were calculated by the authors.

One major factor responsible for less HE opportunities in the West may be its relatively low level of urbanisation. Table 2 indicates that urban population was only 36.7% of its total population in the West in 2006, which was 10 percent lower than the national average. Using a simple cross-section regression of provincial level data in 2006, Figure 4 shows a strong correlation between urbanisation and HE enrolment rates. On average, the enrolment increases by 3.7 students per 10,000 people if urbanisation rises by 1 percent.

Figure 4 Correlation between urbanisation and HE enrolment rates (2006)



Source: All data were from China's official statistical data online at <http://www.moe.gov.cn/>.

With respect to the impact of HE expansion on different social groups, the impact of ethnicity was also examined by comparing 5 autonomous regions which are dominated by minority nationalities with 7 other provinces in the West. No significant difference is found regarding the distribution of HEIs, teachers and student enrolments between the two regions comprised of different ethnic groups.

6. Distribution of national key universities

So far we have discussed the impact of HE expansion on social justice in terms of quantity but not in terms of quality. The quality of Chinese HEIs varies significantly. Hence, the assessment of HE expansion on social justice has to be based on quality differences of HEIs as well. As far as quality is concerned, the distribution of national key universities is a good indicator of the uneven distribution of HE resources and its impact on different regions.

Apart from the Ministry of Education, all central ministries have relinquished to provincial governments their control and ownership over the universities previously under their authority. This decentralisation of HEIs has led to an even more unbalanced redistribution of HE resources between regions. As shown in Table 6, the number of HEIs owned by central ministries declined from 214 in 1998 to 71 by 2006, but the share of HEIs accounted for by the Municipals as a proportion of national total rose from 22% to 38%, implying that national key HEIs became more concentrated in the Municipals. The West is shown to have been most disadvantaged as a result of decentralisation.

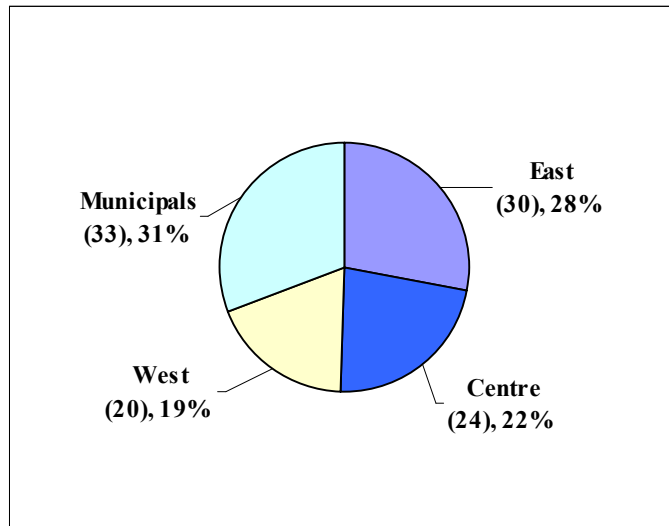
Table 6 Rearrangement of ministry-owned universities by region

Region	1998		2006		2006/1998
	No.	%	No.	%	%
East	66	30.8	20	28.2	30.3
Centre	57	26.6	13	18.3	22.8
West	43	20.1	11	15.5	25.6
Municipals	48	22.4	27	38.0	56.3
Total	214	100	71	100	33.2

Source: The existing data were combined with that from http://zx.china-b.com/cadx/zixun_11075.html and Wuhan University online resources.

Further evidence of uneven distribution of national key HEIs can be observed from Figure 5. Of the 107 national key ('211' programme) universities, Beijing and Shanghai have 33, or 31% of the total, followed by the East 30 (28%), the Central 24 (22%) and the West 20 (19%).

Figure 5 Distribution of national key universities by region



Source: <http://www.sina.com.cn>.

It is important to note that the uneven distribution of national key universities might not necessarily lead to regional inequality in gaining access to these universities if they were required to recruit students from all provinces according to a transparent and unified national standard. In practice, however, students from Beijing, Shanghai and other big cities have much easier access to the national key universities located in their own local cities than is the case for students from outside.

Table 7 shows the distribution of local students as a proportion of total new entrants in some top universities in 2005. Using Beijing University as an example, 17% of its new entrants in 2005 came from Beijing. As Beijing accounted for 1.2% of China's total population, this indicates that on average, students from Beijing were 14 times as likely to study in Beijing University as those from the rest of the country. The tendency of the top universities located in provincial capital cities, such as Fudan, Nanjing and Zhejiang Universities, to recruit local students is shown to be much higher. For example, Zhejiang University recruited 61% of its new students in 2005 from Zhejiang province.

Since all the top universities are centrally financed and supported by the Ministry of Education, uneven access to these universities implies unfair distribution of central resources at the expense of students from the rest of the country, particularly from the West where the number of national key universities is relatively small.

Table 7 Shares of local students in some top universities in China (New entrants in 2005)

Universities	Location	Local students in total new entrants (%)
Tsing Hua	Beijing	16
Beijing	Beijing	17
Nanjing	Nanjing	55
Fudan	Shanghai	44
Shanghai Jiaotong	Shanghai	47
Zhejiang	Hangzhou	61
Wuhan	Wuhan	50

Source: <http://www.edu.cn>.

Unfair access to national key universities can also be reflected by the different minimum entrance examination scores set by these universities for students from different regions (Table 8). The minimum entrance examination scores were significantly lower in Beijing and Shanghai than in the rest of the country by about 10%. As big cities offer better pre-university education than other areas in the country, lower entrance examination scores give their students an enhanced advantage in access to HE as compared to students from elsewhere, especially in their access to national key universities.

The minimum entrance examination scores are determined by provincial or city authorities, not by the central government. Individual provinces can set their own examination papers so that the minimum entrance examination scores cannot be coordinated across the whole country. This system gives large room for some regions, especially Beijing and Shanghai, to lower their recruitment standards for local students and disguise its unfairness towards those from disadvantaged social groups and locations.

Table 8 Minimum examination scores of new entrants for key universities

Region	1998	2006
East	550	566
Centre	541	559
West	481	529
Municipals	462	497
Total	516	546

Notes: The minimum entrance scores for the degree of Bachelor of Science.

7. Impact of HE commercialisation

For disadvantaged social groups and regions, the expansion of HE is a double-edge sword, which creates more HE opportunities, but at the same time, imposes a large

financial burden on poor families. With the new funding mechanism, regional governments and families have to share the costs of HE with the central government.

Table 9 shows the changes of public funding and tuition fees from 1998 to 2006. Compared with public funding, the increase in tuition fees was spectacular. At the national level, tuition fees increased 4.2 times from 37 billion to 155.3 billion RMB, while public funding rose by only 2.5 times, from 203.2 billion to 516.1 billion RMB. The increase in tuition fees was fastest in the West (5.3 times) among all regions, followed by the Municipals (5.1 times), the East (4 times) and the Central (3.8 times).

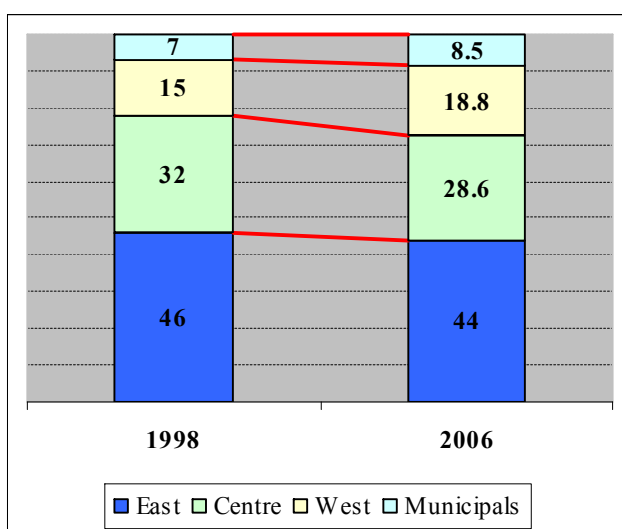
Table 9 Change of HE funding (in Billion RMB)

Region	1998		2006		2006/1998	
	Fund	Fees	Fund	Fees	Fund	Fees
East	83.5	17.0	215.2	68.4	2.6	4.0
Centre	51.8	11.8	121.9	44.4	2.4	3.8
West	46.5	5.5	118.0	29.2	2.5	5.3
Municipals	21.5	2.6	61.1	13.3	2.8	5.1
Total	203.2	37.0	516.1	155.3	2.5	4.2

Notes: Government funds are not limited to HE but all levels of education.

Different regional growth rates of tuition fees and public funding resulted in an adjustment in the regional shares of HE funding required from students as shown in Figure 4. In 1998, the West accounted for 15% of total national tuition fees. By 2006, this share rose to 18.8%. This comparatively small rise indicates that the poorest region was most disadvantaged as a result of HE funding reform.

Figure 4 Adjustment of regional composition of tuition fees



Source: Data were from online resources of 1998 and 2006 tuition fees from different universities, representing different provinces.

Thus it can be seen that the HE funding reform has a significant implication for social justice. As shown in Table 10, the average tuition fee per student was three quarters

of the per capita income of the urban population, but 2.2 times the per capita income of the rural population. In the West, average tuition fee per student was three times the per capita income of its rural population, which was significantly higher than in other regions.

Table 10 Tuition fees and rural/urban incomes (2006)

Region	Fees (RMB/student)	Incomes (RMB/person)		Fee/income ratio	
		Rural	Urban	Rural	Urban
East	9382	4979	13185	1.88	0.71
Centre	7532	3359	9803	2.24	0.77
West	7638	2576	9545	2.97	0.80
Municipals	13093	8707	20323	1.50	0.64
Total	8469	3871	11364	2.19	0.75

Sources: National Bureau of Statistics, Statistical Yearbook of China (2007), Statistical Press (Beijing).

8. Conclusions and implications

Over the last 30 years, China has made remarkable achievements in HE development along with its fast economic growth. The numbers of HEIs, students and teachers have increased rapidly. In particular, the GER has risen from less than 7% to 22% over the last decade due to two major reforms: decentralisation of HEIs and commercialisation of HE. Decentralisation focused on transferring control and ownership rights from central ministries, except for the Ministry of Education, to regional and city authorities. Commercialisation, on the other hand, focused on charging tuition fees to establish a co-funding model between parents and government.

This paper does not focus on how HE has contributed to economic growth, or *vice versa*, or on the overall development of HE in China, as these issues have been well studied in existing literature. Instead, it focuses on how the above-mentioned HE reforms over the last decade have impacted on social justice, an issue which has not been sufficiently addressed by other studies but has important policy implications for the future direction of HE reform in China.

Social justice is defined as 'equal access to HE for all' in both 'quantity' and 'quality' terms. Quantity refers to the absolute number of places offered to different social and economic groups, and to different geographic locations as a result of HE expansion from elitism to mass education. Quality refers to the opportunities of access to national key universities and the concomitant prospects of employment. Social justice is also defined as the relative ability of different social and economic groups to afford HE and how the reforms may have affected the relative welfare of these different groups.

The key questions are:

- Have different social, economic and geographical groups had better and fairer access to HE opportunities in both quantity and quality terms?
- Have the HE reforms enhanced the opportunities of the disadvantaged groups compared to the advantaged groups or not?

To answer these questions, we used statistical data from two separate cohorts of newly enrolled students in 1998 and 2006. Empirical analysis of the enrolment data

and additional information on HEIs in the same years provide the following answers to the questions.

Firstly, more HEIs were established and more HE teachers were recruited in all the four geo-economic regions: East, Centre, West and Municipals (Beijing and Shanghai) over the data period. In particular, relatively more HEIs and HE places were established in the provinces compared to the Municipals. In quantity terms, HE expansion over the data period had two controversial results. On the one hand, the provinces fared relatively better than the Municipals. On the other hand, the West region did not benefit much from the redistribution of HE resources. In contrast, the East gained the most advantage in the number of institutions.

Secondly, the distribution of national key HEIs became more uneven across the regions over the data period. In particular, Beijing and Shanghai had a large share of the total number of national key universities although they accounted for a small fraction of the country's population. The East also had a big share of national key universities compared to the rest of the country. As national key universities had a strong bias in their recruitment policy, students from Beijing, Shanghai and the eastern provinces had a much better chance of being accepted by those universities. For instance, students from Beijing were 14 times as likely as those from the rest of the country to go to Beijing University. Since national key universities were centrally financed, there was a clear bias towards big cities and prosperous provinces in terms of HE resource allocation. In other words, the application of social justice deteriorated in terms of its quality as a result of HE reform.

Thirdly, the welfare of poor people, especially the rural people and those in more indigent areas, declined compared to the welfare of rich people, especially those in big cities and the eastern provinces. Tuition fees became a critical deterrent for low-income students seeking access to HE. This was because tuition fees accounted for a much smaller proportion of urban incomes than that of rural incomes. As a result, HE reforms created relatively more opportunities for the advantaged groups and regions than they did for the disadvantaged groups and regions. For some low-income families, paying tuition fees could reduce them to poverty, especially in cases where graduates could not find suitable employment after graduation.

The government is aware of the difficulty faced by the poor and has been trying to help them through the provision of student loans. The take-up rate of student loans, however, has been low and the help provided to the most needy has been limited. Against the background of a highly divided and unequal society in today's China, HE reforms over the last decade may have contributed to more economic inequality and social injustice.

This is really a challenge to policy makers aiming to build a harmonious society. The government could play a more active and positive role in helping the poor and improving social justice through its organisation of HE. Possible policy methods might include the improvement and extension of student loans, the improvement of access to national key HEIs for rural and poor urban students, more investments in education in poor provinces, and more direct financial support to the HEIs located in the most disadvantaged areas.

References

Hannum, E. and Buchman, C. (2003), *The Consequences of global educational expansion: social science perspectives*, Cambridge, MA: American Academy of Arts and Sciences. Available to read online: www.amacad.org.

Huang, Lihong (2005), *Elitism and equality in Chinese higher education: studies of student socio-economic background, investment in education, and career aspirations*, Stockholm.

Hu, R. and D., Chen (2002), *Chinese education development through non-government schooling, restructuring and innovation*, Shanghai: Shanghai Academy of Educational Sciences.

Li, Peng (1996), Report on the outline of the Ninth Five-Years Plan for national economic and social development and the long-range objectives to the year 2010, *Beijing Review*, 39 (15), 1-19.

Li, W. and W., Min (2001), An analysis of the current and potential scale of Chinese higher education, *Journal of Higher Education (Chinese)*, 22 (2), 27-31.

Li, H. Z. (2003), Economic transition and returns to education in China, *Economics of Education Review*, 22: 317-328.

Jacob, W. James (2006), Social justice in Chinese higher education: regional issues of equity and access, *Review of Education*, 52, 149-169.

Kang, Ouyang (2004), Higher education reform in China today, *Policy Futures in education*, 2(1), 142.

King-lun, Ngok and Joseph, Yu-Shek Cheng (2006), *The interactions between Hong Kong, Mainland China and Taiwan and their impacts, May 1998-May 1999*, Taipei: Cross-Strait Interflow Foundation.

Trow, Martin (1972), The expansion and transformation of higher education, *International Review of Education*, 18(1), 61-84.

Tsang, M. C. (2000), Education and national development in China since 1949: oscillating policies and enduring dilemmas, *China Review 2000*, Retrieved July 26, 2003 from www.tc.columbia.edu/centers/coce/publications.htm.

Wan, Yinmei (2006), Expansion of Chinese higher education since 1998: its causes and outcomes, *Asia Pacific Education Review*, 7(1), 19-31.

Wei, X. and W., Li (2000), *Report on the demand, supply, scale and growth speed of higher education in China*, Beijing: Institute of Higher Education Research, Beijing University.

Wu, Bin and Yongnian, Zheng (2008), Expansion of higher education in China: challenges and implications, *China Policy Institute discussion paper No 36*, University of Nottingham.

Raftery, A. E. and M., Hout (1993), Maximally maintained inequality: expansion, reform, and opportunity in Irish education, 1921-75, *Sociology of Education*, 66(1), 41-62.

Xing, Yuqing (2006), "Gini Coefficient" to China, *Nanfang Daily Press Group - 21st Century Economic Reports*, 25 August 2006.

Yang, D. (2006), *Higher education opportunities: gaps persist despite improvement*, Beijing: Higher Education Research Institute, Beijing University of Science and Technology.

Yang, Dong Sheng (2004), Analysis of education industrialisation, *Nanfang Weekly*, 10 October 2004.

Zheng, Z. (2006), Mr. Tang Min, isn't enrolment expansion a mistake? *Nanfeng Chuang*, retrieved from <http://www.sina.com.cn>.

Zhang, L. (2000), Enrolment expansion: challenges and problems faced by higher education institutions, *Jilin Educational Science: Higher Education Research (1)*.

Websites

<http://people.com.cn> December 8, 2000.

<http://www.sina.com.cn> (<http://www.sina.com.cn> April 3, 2006 18:16 Sina Exam).

www.news.cn (April 12, 2008, Source: Beijing News).

<http://www.fjzs.com.cn> (July 26, 2006, Source: People's Daily Overseas Edition).

www.edu.cn (April 24, 2006, Source: Chinese Youth).

http://www.cpad.gov.cn/data/2006/0303/article_312.htm