Chapter 8
Demands and Responses in Chinese Higher Education

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8.1 Introduction

Since China launched its open door and economic reform policy in 1978, there has been high and sustained economic growth over the last 30 years or so. The enhanced economic situation has provided a solid basis for the development of higher education in terms of both government financing and private investment in the sector. Meanwhile, the improvement in higher education has contributed to economic growth through knowledge production, human resource provision, and promoted social mobility. Although higher education and socioeconomic reforms as two dynamic forces affect the development of each other, this study focuses on the responses of Chinese higher education to the demands arising from social and economic transformation in China mainly during the first decade of the twenty-first century.

The existing academic literature on Chinese higher education reforms (published in English) has often shed light on the responses of Chinese higher education to pressing demands from the society, though implicitly and with a narrow focus. Among them, the common themes are concerned with equity and quality challenges in the massification of higher education (Zha 2009, 2011; Cai and Kivistö 2011; Kai and Ertl 2010), restructuring of higher education (Wan 2008; Cai 2007; Nyeu 2006), emergence of private higher education (Zha 2006; Cao 2007; Li and Morgan 2008; Cai and Yan 2011), employment of university graduates (Bai 2006), changing governance models in higher education (Cai 2010; Ka-Ho Mok 2005; Yang et al. 2007), building world class universities (Deema et al. 2008), the changes of higher education in the information society (Cai and Guo 2006), knowledge economy (Wang and

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Zhou 2009) and innovation systems (Wang and Zhou 2008; Wu 2007), the emerging quality assurance issues (Liu and Rosa 2008), and the internationalisation of higher education (Yang 2002; Wang 2008; Cai 2004).

However, the authors have not systematically explored the demand for Chinese higher education especially in the recent decade. Neither have they discussed corresponding responses in higher education from a holistic perspective. This chapter is thus an effort to fill the gap, and the central research question is: how has Chinese higher education responded to the demand arising from the social and economic transformation in the last 10 years?

The analysis about the relationship between demand and responses is made through a rational approach with a special focus on the government's intentions. Such an approach is relevant for the study of China, as basically most of social changes as well as higher education reforms are initiated and even being steered by the government. Therefore, an analysis from a policy perspective is important for understanding the demand and responses in Chinese higher education.

Meanwhile, we acknowledge that our study in following such approach has limits, as the interactions between demands and responses are more complicated than we have described. The analysis of responses of Chinese higher education also needs to consider institutional/cultural factors, such as the Chinese political system, culture, and traditions. This is also a research gap to be filled, though it is not addressed in this study.

8.2 Transformation of Chinese Higher Education and the Current Higher Education System

Before moving on to the discussions on demands and responses in Chinese higher education, it is necessary to briefly review the transformation of Chinese higher education in the last three decades as well as the characteristics of the current higher education system.

8.2.1 Economic Reforms and Structural Changes in Higher Education

To understand socioeconomic transformation in China in the last decades, one must be aware of the economic reform and open-door policy launched in 1978. Since then, China has gradually entered into a socialist market economy or "state capitalism" (Li et al. 2012) and became integrated into the global economy. While the political system has not changed much, the transformation in the economic system is fundamental. According to Tisdell (2009, p. 272), "China's economy has changed from an economy in which market forces played virtually no role in organising economic activity to one in which these forces play a major role".

Once the economic reforms were started, the government realised that the traditional model of higher education developed in a centrally planned system was inappropriate with the government allocating resources, directly controlling institutions, assigning jobs for graduates, and even deciding enrolment numbers as well as curricula. Hence, the Chinese government started to review its education system and called for resolute steps to reform the higher education system.

The reform in higher education was signalled by the "Decision on Reforming the Education System" issued by the Central Committee of the Chinese Communist Party (CCCCP) in 1985. However, major reforms did not start until the launch of the "Outline for Education Reform and Development in China" issued by the CCCCP and the State Council in 1993. Basically, two reform strategies are used: "to introduce market forces to liberate education, create impetus for change, and encourage competition for improvement", and "to use legislation to regulate new social relationships, practices and behaviour arising from the first strategy" (Law 2002, p. 579).

Generally speaking, the policies developed after 1993 have basically formed the agenda of Chinese higher education reforms until the end of 1990s. The reforms in the 1990s and 2000s were remarkable in that there was a dramatic expansion of the scale of higher education, progress in faculty development, decentralisation of administration, diversification of financing, privatisation of education provision, development of competitive universities, and internationalisation (Wang and Liu 2009). Meanwhile, the reforms were associated with problems and dilemmas, such as weak capability for cultivating top-notch innovative personnel, gaps between the skills provided by universities and the demands of industrial development, unstable and inadequate conditions for the sustainable development of higher education, and the pressures for graduate employment (Cai et al. 2011). These problems particularly hampered China's efforts at making the transition from a labour-intensive economy to a knowledge-based economy driven by innovation and international competitiveness. Realising the aforementioned problems and challenges, the State Council promulgated the "Outline of China's National Plan for Medium and Long-Term Education Reform and Development (2010–2020)" in July 2010 that led to a new round of reforms.

8.2.2 The Current Chinese Higher Education System

Most higher education systems in the world follow either the British-American or the European patterns. Although the reforms in Chinese higher education since the 1980s, especially the 1990s, witness a transition from the Soviet model towards American patterns (Yang 2000), it cannot be simply claimed that the Chinese higher education system follows the American model. Rather, the shaping of the current Chinese higher education system is a result of various Western influences (Cai 2012; Hayhoe 1999).

8.2.2.1 Degree Structure

Higher education is accessible through *gaokao*, which is the National Higher Education Entrance Examination. It is usually taken by students in their last year of high school, although there has been no age restriction since 2001. The Chinese higher education is a unitary system in which all institutions provide equivalent degrees. Higher education at the undergraduate level includes 2- and 3-year associate degree (*dazhuan* in Chinese) programmes and 4-year bachelor degree programmes. Students with an associate degree need to have 2 additional years of continuing (adult) education in order to receive a Bachelor diploma. There are junior colleges, including higher vocational colleges, which only offer associate degrees. However, associate degree programmes are also available at universities, which mainly provide 4-year bachelor degree programmes. Master's and doctoral degrees are offered by both universities and research institutes. The latter are affiliated with the Chinese Academy of Sciences and Chinese Academy of Social Sciences. Master's degree study normally takes 2 or 3 years, and doctoral degree study normally takes 3–4 years.

The 2–3 years, short-cycle, vocationally oriented higher education programmes, leading to associate degrees, can be compared to the community colleges in the USA. However, in China there is no American-style liberal education at the undergraduate level. Students start with a specific major in associate or bachelor degree programmes, and with the degrees they are able to enter the labour market in the professions concerned. However, some institutions are now trying to broaden the scope of major choice for students.

8.2.2.2 Types of Higher Education Institutions

By the end of 2010, there were 2358 regular higher education institutions, excluding adult higher education institutions (Chinese Ministry of Education 2011). The higher education system in China is vertically divided into four layers, namely research institutions, research and teaching institutions, teaching institutions, and application-oriented institutions (Cheng 2004, p. 207–208). Research universities are typically "Project 985" universities. Project 985 is a national effort to create world-class universities launched in 1998. Currently there are 39 Project 985 universities, which are also part of "Project 211", the Chinese government's endeavour initiated in 1993 to strengthen about 100 higher education institutions as a national priority for the twenty-first century. Currently, there are 112 Project 211 institutions. The 985 universities are in the top layer of Chinese higher education, the remaining 73 project 211 institutions are oriented towards both research and teaching, constituting the second layer. In the third layer, there are around 600 (mainly regional) higher education institutions. They mostly engage in teaching activities but also perform research to some extent. The rest of over 1000 higher education institutions (often tertiary vocational colleges) are in the bottom layer, providing mainly

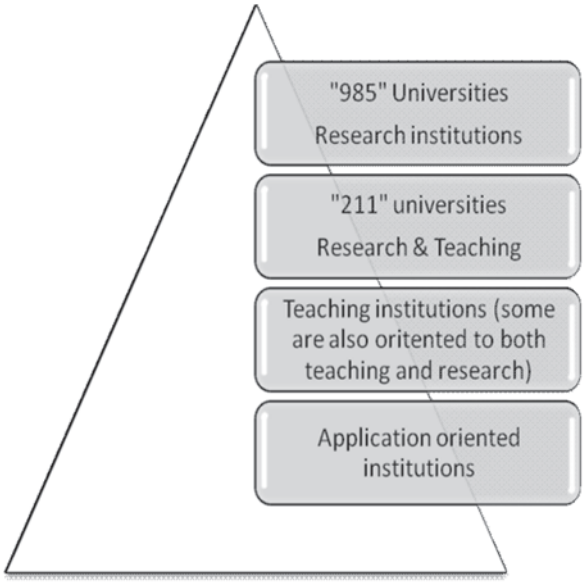

Fig. 8.1 Pyramid of Chinese higher education institutions

2–3-year undergraduate (associate degree) programmes. The four layers of Chinese regular higher education institutions can be described in a pyramid (Fig. 8.1).

Higher education institutions in China can be public or private. Most private institutions are in the bottom layer and only a very few in the third layer as teaching oriented institutions, and none of them are in the top two layers. There are three major types of private higher education (Cai and Yan 2011). The first are established by private actors only and can grant associate or bachelor degrees. The second are the independent colleges, offering bachelor degree programmes. An independent college is sponsored by private investors but is affiliated to a host public university. Its governing body is composed of people from both the public and private sides according to their contributions or negotiated capital shares. It is run as self-financing entity and usually contributes a significant share of its revenue to the public mother university. The third type, owned by private actors, cannot grant degrees or diplomas, and their main activity is to prepare the students for national self-study examinations. Table 8.1 shows the number of institutions and enrolment in the various types of private institution, in comparison with the much larger public sector.

8.2.2.3 Financing

Reforms since the 1990s saw a shift of financial responsibilities from state to non-state sectors, by charging tuition fees and encouraging universities to generate revenues. In the last decade, while government funding on higher education roughly accounted for half of higher education funding, there is a visible increase in university "own" revenue (Table 8.2).

Table 8.1 Numbers and enrolments of private and public regular higher education institutions in China in 2010. (Source: Department of development & Planning of the Chinese Ministry of Education (2011))

Type of institution	Number of institutions	Enrolment of postgraduate students	Enrolment of bachelor degree students	Enrolment of associate degree students	Enrolment of self-study programme students
Type 1	353 (48 bachelor awarding)	NA	420,110	1,743,558	187,342
Type 2	323	0	2,389,774	213,403	18,736
Type 3	836	0	0	0	921,841
Public higher education institutions	1682	1,538,416	9,846,248	7,704,836	NA
Total	3194	1,538,416	12,656,132	9,661,797	1,127,919

8.3 Social and Economic Changes and Demand for Higher Education in the Last Decade

8.3.1 Improvement of Economic Condition and Increasing Demands for Higher Education

China has enjoyed high and sustained gross domestic product (GDP) growth since the economic reform started in 1978. Fortunately, China has managed to keep the economy growing even after the Asian financial crisis in 1997 and the global economic recession in 2008. In the last decade, the GDP almost quadrupled from 10,966 billion yuan in 2001 to 40,120 billion yuan in 2010 (National Bureau of Statistics of China 2011). In 2010, China surpassed Japan and became the world's second largest economy after the USA. According to the International Monetary Fund's (IMF's) forecast, China's GDP will exceed the USA's in 2016 (Song 2011).

Alongside GDP growth, the economic situation of the population has also largely improved (Table 8.3), though it is still not comparable to Western standards. Tuition fees were introduced in public higher education in 1997, but thanks to the increased household income created by economic growth, the number of students continued to grow. In 1998, there were 3.2 million students attending the national higher education entrance examination (or *gaokao* in Chinese), while in 2010 the number increased to 9.57 million. The increasing demand creates a space for the private sector to grow and make up the gap in public provision.

This study focuses on higher education, but it should be noted that the changes in higher education are closely linked to developments in secondary education. The number of graduates from high schools increased significantly in the 1990s and early 2000s due both to the improvement of the economic situation and the growth of the cohort population. In 1998, there were only 2,517,845 high school

Table 8.2 Composition of funding in regular higher education institutions: 2001–2010 (10,000 yuan, %). (Source: National Bureau of Statistics of China (2011))

Year	Govt. funding	Private investment (in private higher education sector)	Endowment	Educational revenue (including tuition fees and other commercial incomes)	Others	Total
2001	6,328,003.5 54.24%	181,992.7 1.56%	172,774.7 1.48%	2,824,417.1 24.21%	2,158,573.8 18.50%	11,665,761.8 100.00%
2002	7,521,463 50.55%	331,363 2.23%	278,253 1.87%	3,906,526 26.26%	2,840,985 19.09%	14,878,590 100.00%
2003	8,405,779 47.91%	603,015 3.44%	256,375 1.46%	5,057,307 28.83%	3,220,992 18.36%	17,543,468 100.00%
2004	9,697,909 45.54%	1,121,982 5.27%	215,440 1.01%	6,476,921 30.41%	3,785,362 17.77%	21,297,613 100.00%
2005	10,908,368.7 42.77%	1,801,315.4 7.06%	210,796.3 0.83%	7,919,249.3 31.05%	4,662,641.1 18.28%	25,502,370.8 100.00%
2006	12,595,712 42.86%	2,327,498 7.92%	193,315 0.66%	12,239,465 41.65%	2,032,778 6.92%	29,388,769 100.00%
2007	15,983,187 43.98%	318,788 0.88%	271,809 0.75%	16,987,027 46.74%	2,781,040 7.65%	36,341,851 100.00%
2008	20,035,116 47.59%	301,687 0.72%	286,343 0.68%	18,644,142 44.28%	2,835,082 6.73%	42,102,369 100.00%
2009	22,645,083 48.75%	330,962 0.71%	261,761 0.56%	20,188,915 43.46%	3,023,369 6.51%	46,450,089 100.00%
2010	29,018,026 52.78%	269,647 0.49%	296,357 0.54%	22,165,552 40.32%	3,229,068 5.87%	54,978,649 100.00%

Table 8.3 Incomes and expenditures of citizens. (Source: National Bureau of Statistics of China (2011))

Year Income and expenditures (yuan)	1990	2000	2009	2010
Urban per capita disposable income	1510	6280	17175	19,109
Rural per capita net income	686	2253	5153	5919
Urban residents' per capita consumption expenditure	1279	4998	12,265	13,471
Rural residents' per capita consumption expenditure	585	1670	3993	4382
The balance of resident's deposits (per capita)	623	5076	19,541	22,619

graduates; in 2010 the number increased to 7,944,335 (Department of Development & Planning of the Chinese Ministry of Education 1999, 2011). This expansion of secondary education created a strong demand in the population for more opportunities to assess higher education.

While more and more students are able to attend *gaokao* and have a better chance to pass the exam, the competition for "good" universities is strong. Among more than 2000 higher education institutions, only the 112 "Project 211" and especially the 39 "Project 985" universities are considered as being of high quality or prestige. A recent study reveals that the admission rate for all higher education institutions through *gaokao* is 72.91 %, but the rate is only 5.89 % for "Project 211" universities (Pan 2012).

In the last decade, a growing number of Chinese students chose to study abroad either because they could not enter the Chinese higher education institutions or could not enter the more prestigious institutions. Compared to getting into prestigious universities such as Tsinghua or Peking University through gaokao, there are more chances to enter a first class foreign university (Wang 2011), and so this path is followed by many students that can afford it.

The growing demand for higher education, in terms of both quantity and quality, requires serious investment. The government has been investing more, particularly in the top national universities, but the investment per student in regional universities is falling. Thus, while the governmental grant per student in national universities increased from 8697 yuan in 1998 to 12,483 yuan in 2006, among regional universities the value decreased from 6498 to 4751 yuan in the same period (Wang 2012).

8.3.2 Changes of Economic Structure and Demands for Higher Education

Economic growth in China has been strongly associated with an increase in the industrial and service sectors, and a reduction of the relative importance of the agricultural sector, both in terms of its contribution to GDP and in employment.

There are also structural changes within the industry and service sectors. While China has maintained very rapid economic growth over the last three decades, the low-wage and labour-intensive manufacturing as the main driver of economic growth has been challenged by emerging competitors in Southeast Asia as well as by China's domestic environmental degradation. To ensure sustainable progress in the future, China has recently shifted its economic priority from labour-intensive to capital-intensive and technology-intensive production (OECD 2007). Since the turn of the new century, China has been boosting investment in science and technology, and taking steps towards building a high-performing innovation system and knowledge economy. A strong goal is to turn China into an innovative country by 2020 (State Council 2006).

This creates two pressures on higher education, to increase its quality and to link higher education more strongly to economic development. First, to become a knowledge economy, China needs to further improve the quality of its human resources. As former President Hu Jintao stated at the 17th National Congress of the Communist Party of China in 2007, China needs to switch from a country

Table 8.4 Share of population in rural and urban areas between 1980 and 2010 (%). (Source: National Bureau of Statistics of China (2011))

	1980	1985	1990	1995	2000	2005	2010
Urban	19.4	23.7	26.4	29.0	36.2	43.0	50.0
Rural	80.6	76.3	73.6	71.0	63.8	57.0	50.0

with a large population into a great country with strong human resources. The "Report on Chinese Talented People" (Chinese Ministry of Personnel 2005) estimated that China had a gap of 20 million talented people during the period of 2006–2010.This requires universities not only to improve the quality of their education, but also to adjust their programme to respond more closely to the needs of the economy.

These two goals, however, are not necessarily the same. In modern economies, in addition to teaching and research, universities are expected to be more engaged with society, particularly the industrial sector, developing practical knowledge, applications, and services and even becoming economic actors in their own right (this is often called the "third mission" of universities; Etzkowitz 2008). This demand also exists in China, where universities are expected to improve quality in both teaching and research, and to be innovative and effective in transferring their knowledge to the industry and directly support national and regional economic development (Wang and Zhou 2008). However, it has been observed that in practice, there is lack of trust and motivation between universities and industry to develop an effective and reciprocal cooperation relationship (Kroll and Liefner 2008; Wang 2011). The main motivation for the universities is to improve their vertical status by becoming more research-oriented, and, because of this, they tend to become alike and academic, instead of trying to respond to the multiple and differentiated demands of the economy, in spite of the fact that, in reality, only a small number of institutions can ever expect to be selected into "Project 211" and "Project 985".

8.3.3 Urbanisation and Social Disparity

According to Tang (1997, p. 3) "(C)entral to the various explanations of urbanisation is the recognition of a penetrative role of the Chinese State" (Tang 1997). Since 1978, China has employed various ways to urbanise itself, including the implementation of the rural household responsibility system (an agriculture production system, which allowed households to contract land, machinery and other facilities from collective organisations), establishment of town and village enterprises, construction of small towns in rural areas, and mobility of workforce from rural areas to urban areas and so forth (Wu et al. 2008). As mentioned early, the agriculture sector has dramatically decreased in the last three decades. Meanwhile, more and more people move from rural areas to live in cities. The percentage of the rural population was 80% in 1980, reducing to 50% in 2010 (Table 8.4).

The process of urbanisation has been associated with growing social disparity. At the beginning of the reform epoch over 30 years ago, Deng Xiaoping advocated a policy guideline "to let some people to be rich first". The purpose of the new policy was to stimulate individual productivity and in turn to achieve national economic growth. This policy turned the previous static and egalitarian society into a dynamic and stratified distributive system, with growing disparities between rural and urban areas, different regions, and between low- and high-income groups.

According to the statement by the Director of China Statistics Bureau in a press release on 18 January 2013, the Gini coefficient has stayed at a relatively high level of between 0.47 and 0.49 during the last decade, indicating that China has a big gap between the rich and the poor (Xinhua 2013). In the 2011 "Annual Report on Urban Development of China" (Pan et al. 2012), it has been reported that the ratio of urban disposable income to rural residents' net income reached 3.13, which was among the highest in the world. There is a very big GDP/capita differential between regions. In 2011, the GDP/capita of Tianjin, Shanghai, and Beijing was more than US$ 13,000, while the figures are around US$ 3,000 in Guizhou, Yuanan, and Gansu, from the west or southwest provinces (National Bureau of Statistics of China 2012).

According to the law, all citizens are supposed to have equal opportunities to access higher education. However, the economic disparities have aggravated the equity problem in higher education. First, partially due to differences in economic development, the higher education institutions are not evenly distributed among municipal cities and provinces. Each province sets its own admission cut-off scores mainly based on the capacity of higher education institutions in the region, leading to unequal opportunity for higher education of the cohort age group across provinces. In 2005, the highest higher education gross enrolment ratio was 57% in Shanghai, and the lowest only 10% in Guizhou province. In the meantime, the highest admission rate through *gaokao* was 85.7% in Hainan province, and the lowest 48.9% in Gansu province (Planning Department of Chinse Ministry of Education 2007). Secondly, students from poorer families and regions have unequal access to good quality secondary education, leading to different chances of gaining access to most prestigious institutions and more valued careers (Ma 2011; Feng 2011).

8.4 Responses of Higher Education Institutions

The aforementioned demands for higher education arising from the social and economic transformation become the primary driver for Chinese higher education reforms since the late 1990s. Both national policies and institutional actions in the last decade reflect the responses of higher education to this demand.

Table 8.5 The development of regular higher education in China between 1998 and 2010. (Source: Statistics communiqué of national education development 1998–2010)

Year	Number of regular higher education institutions	Average student number/institution	New intake of undergraduate students (1000)	New intake growth rate over the previous year (%)
1998	1022	3335	1083	8.32
1999	1071	3815	1548	42.91
2000	1041	5289	2006	29.54
2001	1225	5870	2682	33.73
2002	1396	6471	3037	13.22
2003	1552	7143	3821	25.81
2004	1731	7704	4473	17.05
2005	1792	7666	5044	12.77
2006	1867	8148	5460	8.24
2007	1908	8571	5659	3.64
2008	2263	8931	6076	7.38
2009	2305	9086	6394	5.24
2010	2358	9298	6617	3.48

8.4.1 Massification of Chinese Higher Education

After the Chinese government announced the massification of higher education as a policy goal in 1998, enrolment in higher education increased significantly. The expansion of student enrolment was accompanied by growth in the number of higher education institutions as well as of their size. Table 8.5 shows the changes in the scale of the regular higher education institutions in China between 1998 and 2010.

The main objectives of massification in higher education policy are to meet demands arising from a rapidly growing economy, to alleviate the problem of urban unemployment, and to promote the development and utilisation of China's human resources (Wu and Zheng 2008). It is also a measure to stimulate economic growth after the impact of the 1997 Asian economic crisis (Project team of Peking University 2001; Kang 2000; Zha 2009; Li 2001).

The massification policy has indeed achieved its goals in terms of enrolment ratios (Fig. 8.2). In 2010, the rate reached 26.5 % and the objective is to increase the rate to 40 % by 2020 (State Council 2010). However, the rapid growth of enrolment has generated a number of problems, particularly a decline in education quality, inequality of access to higher education, and high unemployment rate of graduates (Cai 2011). Although along with the economic development and social changes, there is a growing demand for a higher level of education, the responses in higher education have not been a natural adaptation but are being accelerated by the government's intention. This has caused most of these problems, especially the ones related to unemployment.

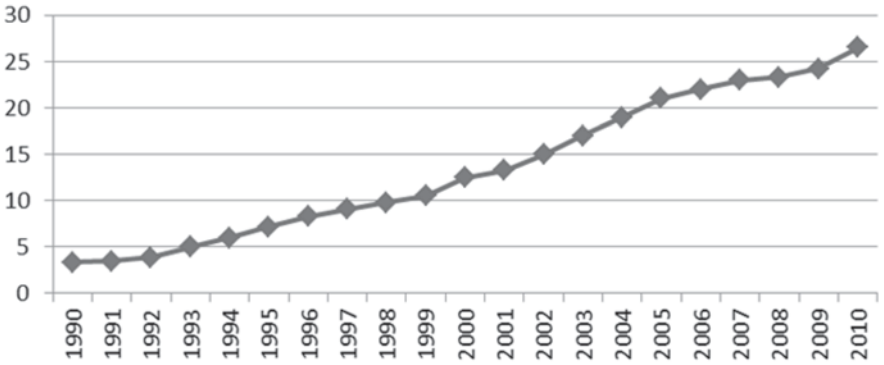

Fig. 8.2 1990–2010 Chinese higher education gross enrolment rates. (Source: Wang and Liu (2009), Statistics communiqué of national education development 2008, 2009, 2010)

8.4.2 Development of Private Higher Education and Diversification of Funding Sources

Along with the process of massification comes the growth in the private higher education sector. Recognising the fact that the state alone cannot meet growing educational needs, the Chinese government has deliberately devolved responsibilities to other nonstate sectors to engage in educational provision and development. The 1993 "Outline" indicated a renewed effort to encourage "people in all walks of life" to run schools and invited international cooperation toward that same end. The 1995 Education Law, the 1997 "Regulations on the Social Forces Running Educational Establishments", and the 2002 "Law for Promoting Private Education", put the governance of private higher education on a more solid legal footing. In 2010, of 2358 higher education institution, 674 were private, and for 22,317,929 students, 4,766,845 were in the private sector (Department of Development & Planning of the Chinese Ministry of Education 2011). To support the further development of private higher education as stated in the "National Plan for Medium and Long-term Education Reform and Development (2010–2020)", the government is taking concrete measures to change the previous policies that hamper the development of private education.

In addition to the growth of private higher education institutions, the 1990s reform further transferred financial responsibility to individuals and families, with the introduction of a "fee-paying principle" (Mok 2005, p. 228). Since 1997, all university students had to pay tuition fees. In response to the financial constraints aggravated by dramatic enrolment expansion since 1999, universities have been encouraged to engage in business and market-like activities to generate more income. Today, there are three major funding sources for Chinese higher education institutions: government funds, tuition fees paid by students, and commercial income from university owned companies and entities, with government sources covering about half of the total costs for the country as a whole (see Table 8.2).

8.4.3 Building First-Class Universities

Another important objective of Chinese higher education reforms is to increase China's competitiveness in the global marketplace. However, top Chinese universities were not good enough by international standards up to the mid-1990s. To improve the prestige and quality of Chinese higher education, The Chinese government successively launched "Project 211" in 1995 and "Project 985" in 1998 by focusing its financing resources on developing a few top Chinese universities. These universities also strive to provide top human resources and research bases for the development of the knowledge based economy in China.

"Project 211" is the Chinese government's endeavour initiated in the 1993 Outline with an aim to strengthen about 100 higher education institutions and a number of key disciplinary areas in terms of teaching, research and administration as national priorities for the twenty-first century, with strong financial support. The project has been implemented since 1995. These institutions are expected to become the basis for training high-level professionals and solving major problems confronting the country's economic and social development. Many of them indeed play a key and exemplary role in responding to regional and sectional development needs.

For instance, since 1994, the Shanghai Municipal Government has signed agreements with the Ministries of Education, Health, Finance, and the former Textile Association for the joint jurisdiction of eight national universities. From 1998 to 2000, the leadership of another 11 national universities were transferred to Shanghai municipality. Therefore, the Shanghai Municipal Government could place these top research universities into regional development plans and provide funding for them; in return, the universities would gear to the regional needs in their education and research.

Currently there are 112 universities in Project 211. Although these universities make up only around 6% of China's regular higher education institutions, they are responsible for training four-fifths of doctoral students, two-thirds of graduate students, and one half of international students. They account for 85% of the country's key subjects, 96% of national key laboratories and 70% of scientific research funding (Zhao and Zhu 2010).

"Project 985" is a national project for founding world-class universities for the twenty-first century, launched after the former President Jiang Zemin's speech on May 4, 1998, who declared that "China must have a number of first-rate universities of international advanced level". In the initial stage, only Peking University and Tsinghua University received the Project 985 status. It was announced by the Ministry of Education (MOE) in 1998 that the two universities would each receive 1.8 billion RMB (about US$ 290 million) within 3 years (1999–2001) from the central government as special development funds in addition to the normal government financial allocation. During 1999–2006, 37 additional universities were listed as Project 985 institutions through a mode of cofinancing between the central government and regional governments.

8.4.4 Quality Assurance

While the reforms of the late 1990s and the early 2000s mainly emphasised research rather than teaching quality, the "Action Plan for Invigorating Education 2003–2007", promulgated by the MOE with the approval of the State Council, shifted the focus towards teaching and teaching quality as well as quality assurance systems. The Action Plan stipulates a framework for developing quality assurance in Chinese higher education (Li 2010).

Following the Action Plan, the first round of nationwide undergraduate education evaluation was carried out during 2003–2008. According to a national survey of more than 4000 respondents from higher education institutions and regional educational administration departments, the most successful results of the evaluation at the institutional level are (Li 2014):

- It helped the institutions to clarify their orientations and characteristics (87% respondents agreed);
- It established the central status of undergraduate education and enhanced the concept of quality (87%);
- It improved management standards and quality control system of undergraduate teaching in higher education institutions (83%);
- It increased the institutions' quality requirement on teaching and bachelor degree theses (81%);
- It improved the teaching condition and optimised the structure of teaching resources (72%).

8.4.5 Strengthening the Role of Universities in Economic Development and Innovation

As a response to human resources needs arising from the growth of the technology industries, many vocational colleges have been established, and around half of higher education students are admitted by this type of college. To promote links between higher education and the world of work, almost all higher education institutions have established offices to guide student employment (Hao et al. 2011). Meanwhile, in many universities there are internal reforms on teaching with an aim to cultivate application oriented or innovation oriented talent (Jiang 2011).

To support the national strategy to establish an innovative country, profound cooperation between Chinese enterprises and universities has taken place since the end of the 1990s. In addition to carrying out basic research, universities are playing an increasingly important role in solving significant science and technology issues in the national economy and in technology transfer (Cai and Liu 2014). The universities' capacity in research and development has been largely improved as well (Wang 2011).

In 2011, Tsinghua University celebrated its 100th anniversary. President Hu Jintao made a remark on university innovation. Followed the event, the MOE initiated

a new project named 2011 Project. It aims to achieve innovation by collaborating efforts among universities, research institutes, industries, and governments. This policy will change from previous institution-based investment to program-based and institution-focused investment.

8.4.6 Internationalisation of Higher Education

In China, the internationalisation of higher education is an inevitable result of China's integration into the global economy as well as an essential measure to improve its higher education system. The practices in the last decade signify an integration of Chinese higher education with the international community, as part of the governmental strategies for building "world class" Chinese universities and strengthening the competitiveness of Chinese higher education. The concrete activities can be observed in the following major aspects, namely student mobility, international dimensions in teaching and research, and joint education provision.

8.4.6.1 Student Mobility

Although China has been pouring huge investments into building schools and universities, it cannot keep up with the surging demand from its youth for higher education. The number of students pursuing study abroad has dramatically increased in the last three decades. During the period 1978–2011, a total number of 2.25 million Chinese students and scholars had studied in 110 countries and regions all over the world, covering almost all disciplines (Chinese Ministry of Education 2012). Currently students from China represent the largest international student group in the world (OECD 2009), and they are going to continue to increase their domination of the international student market in the near future (Maslen 2007).

8.4.6.2 Internationalisation of Teaching and Research

Since the late 1990s, the focus of internationalisation in China has changed from promoting student mobility to enhancing an international dimension in teaching and research. One significant progress in this regard is curriculum reform (Huang 2007): an increasing number of original English-language textbooks have been either directly used in Chinese universities or translated into Chinese language versions; more and more courses are taught in English or bilingually (Chinese and English). In addition, the internationalisation of the teaching profession has been strengthened (Wang 2008). An increasing percentage of Chinese teachers have learning or teaching experience abroad and international experts in a variety of fields are invited to teach in China higher education institutions.

Another significant development is concerned with international research cooperation. The Chinese government encourages Chinese universities and research institutes to develop joint research projects with foreign partners by obtaining support from various sources. The Chinese government has also signed an increasing number of bilateral agreements with different countries/regions. For instance, the Science & Technology Agreement between the EU and China in 1998 provides a legal basis for future cooperation on science and technology between the two sides. As a result, the EU has opened its research and technology development Framework Programme to China, which allows the participation of Chinese institutions. In turn China opened its National High Technology Research and Development Programme (863 programme) and the National Key Basic Research Programme (973 programme) to EU researchers and institutions.

8.4.6.3 International Cooperative Education Provision

One of the most important characteristics of the internationalisation of Chinese higher education in the twenty-first century is the development in Sino–foreign cooperation in running schools. According to the Regulations on Chinese–Foreign Cooperation in Running Schools issued by the State Council in 2003, the term Chinese–foreign cooperation in running schools (CFCRS) is explicitly defined as: "the activities of the cooperation between foreign educational institutions and Chinese educational institutions in establishing educational institutions within the territory of China to provide education service mainly to Chinese citizens" (Article 2). In practice, foreign institutions must partner with Chinese institutions in establish joint education provision in China. By 2007, the approved Chinese and foreign cooperative degree programmes numbered 200 (Lin 2011).

However, since 2006, the MOE had in practice suspended the approval of CFCRS due mainly to quality concerns. Several China-foreign cooperation programmes were discontinued due to poor management, dysfunction, and/or poor quality. The new reform Outline 2010–2020 signals that the Sino–foreign cooperation in running schools will be encouraged and expanded. The government expects that through importing international educational ideas, curricula and teaching staff, more talent with international skills and perspectives will be cultivated in China to meet the needs of economic development. Having more foreign education in China is also considered by the government as a way to prevent a brain drain. However, the government will raise the threshold, meaning that only those prestigious and high-quality foreign partners can be granted permission to enter China (Cai 2011).

8.5 Conclusion

The analysis has treated the socioeconomic changes/demands for higher education and responses in higher education separately. We took such an approach because it is hard to find a one-to-one relationship between the changes/demands and responses.

Table 8.6 Summary of demands and responses in Chinese higher education

Demands for higher education	Major challenges	Reforms as responses to the demands
Students' demand for quantity	There is an increasing demand for higher education Many students pursue higher education abroad	Introduction of private higher education Expansion of higher education enrolment
Students' demand for quality	Students compete for good universities (high quality of education) but the available places are limited	Quality assurance Internationalisation
Society's demands for further investment in higher education	Governmental financial constraints	Tuition fee policy University-run enterprises Privatisation of higher education
Labour market's demands for high quality human resources and innovative talents	Higher quality and innovation talents are in short supply	Building first class universities Expansion of postgraduate education Internationalisation (joint education)
Labour market's demands for different types of human resources	The phenomenon of academic drift	Differentiation between academic education (mainly MOE's responsibility) and professional/vocational education (local responsibility)
Economic development needs for close cooperation between university and industry (due to emerging knowledge-based economy)	University and industry lack trust and motivation for cooperation	University-run enterprises University science and technology park "Project 2011"
Society's demands for equity in access to higher education	Inequity in access to higher education between people whose household registration in different regions Inequity to access to higher education between social groups Imbalance in affordability between poor and rich families	Student loans Green gate (first enrol student and then seek economic solutions) Special admission policies

Even a single piece of higher education policy is often composed of a set of mixed measures responding to several requirements. Nevertheless, we tried to establish a more logical (linear) structure to help readers easily understand the policies that are mainly dealing with the various kinds of challenges and demands as shown in Table 8.6.

This paper has highlighted the growing importance of social and economic factors in higher education in China, implying that the development in higher education is a matter of reconcile the interests of different stakeholders in the society. The new nature of the pact between higher education and society has made the policy processes and governance in higher education increasingly complicated. Regardless

of the remarkable achievement of the Chinese higher education reforms, there still remain challenges in dealing with the relations between state, university and industry, between education as public and private good, between autonomy and accountability, between efficiency and equity, between higher education expansion and labour market needs, and between quantity and quality.

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