
REFORMING HIGHER EDUCATION FOR ECONOMIC GROWTH: CHINA'S ROADMAP

Anh Ngoc MAI¹

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Abstract: *This paper explores the reforming of the higher education system for economic growth since China opened up to the outside world. The result indicates that, although the decentralization of higher education was the platform for China's higher education, curricula adjustment was critical for qualification improvement to be recognized worldwide; Establishing key disciplines and universities at global standards was the priority of the Chinese government, attaining the mass higher education came after that. Lessons would be a valuable paper for researchers and policymakers in developing countries.*

Keywords: *higher education, world-class universities, mass education, economic growth*

1. Rationale

All higher education institutions (HEIs) were public HEIs and under the jurisdictions of both the central and local authorities since the foundation of the People's Republic of China (PRC) up to 1982. Although China's Ministry of Education (MOE) was granted authority in the planning and administration of higher education across the country, the MOE found it difficult to lead and coordinate higher education development and reforms (Du, 1992). The MOE only directly administered 38 out of 1014 HEIs. 285 and 691 HEIs were under the jurisdiction of other central commissions and ministries and provincial governments, respectively (see table 1). Accordingly, the structure prevented vertical communication and cooperation among central commissions and ministries and horizontal connection between the central ministries and provincial governments. As a result, the Chinese higher education system was fragmented into many self-contained mini-systems (Ding, 2001), preventing China's socio-economic development.

The Decision 1985, "Decisions of the Central Committee of the Communist Party of China on Education System Reform", was the foundation for higher education development. China became the world's No second economy in 2010 and is planning

¹ National Economics University, Hanoi, Vietnam, e-mail: maingocanh@neu.edu.vn

on being the first world's economy. Although a number of papers related to reforming China's higher education system have been published (Peters and Besley, 2018; Gu et al., 2018; Mok, 2018; Bie and Yi, 2014; Dongping, 2011; Zhu and Lou, 2011), they are fragmented or not up to date. This paper, therefore, provides a whole picture of reforming China's higher education system for economic growth. The reasons and motivations to push reforming China's higher education system would be investigated. The outputs, outcomes from each reforming stage would be pointed out.

2. Research Framework

For individuals, higher education is seen as a status symbol professionally and a practical means for upward mobility in the job market (Gandhi, 2018). As a result, more and more people from the middle and lower echelons seek higher education. An elite higher education system shifts to a massified system if the percentage of students, the age cohort from 17 to 22 years old, ranges between 15 and 49%; a system with more than 50% students in this cohort age is a universal higher education system (Trow, 2000). Trow (2000) argues that the policies, structures, and practices need to change according to the needs and development of higher education, shifting from the elite to the mass era. The shift can be divided into 2 models: the active mode and the passive and catch-up mode. While the active way is supported by government funding, the passive and catch-up mode relies heavily on social funding (Gao, 2018). Both public and non-public HEIs play vital roles in the mass higher education process. Consequently, mass higher education provides more teachers, doctors, engineers, philosophers, lawyers, artists, and activities supporting economic growth and societies' development (Chankseliani, Qoraboyev, and Gimranova, 2020).

Although HEIs have played an essential role in social development by educating the elite and producing pioneering achievements in science and humanities, the contributions vary across HEIs. While the universities are charged with academic research and education based on it (Pinheiro and Pillay 2016), colleges, polytechnics, or universities of applied science positively influence local GDP growth per capita (Agasisti and Bertolotti, 2019).

The governance of HEIs can be divided into 2 models: The state control model and the state supervising model. Although traditional university governance models have shifted towards the state supervising model among countries followed the Soviet model of university, the government interference in university governance is very high at both institutional and national level (Mai et al., 2020).

In light of the previous works, this paper explores higher education reform under China's economic growth requirements since this country opened up to the outside world. Three stages would be investigated. The priorities and their consequences from each stage would be pointed out. Finally, policy implications from lessons would be a valuable paper for researchers and policymakers in developing countries.

3. The Roadmap of China's Higher Education

3.1. Reconstructing the Higher Education System

Since 1978, the *Third Plenary Session of the Eleventh Central Committee of the People's Republic of China* asserted the central task of economic development. The Chinese government, therefore, adjusted the national higher education system to accelerate economic growth (Mok, 2001).

HEIs under the jurisdiction of central commissions and other ministries were handed over to the MOE or provincial governments, excluding particularly or essential institutions for the industry development (Bie and Yi, 2014). Provincial governments have vested the responsibilities not only for financing HEIs under their jurisdictions but also financial assistance to students instead of receiving subsidies directly from the Ministry of Finance. The provincial governments were provided powers to establish, adjust, and close short-cycle academic programs and make annual and long-term admission plans for HEIs (with the approval of MOE). They are also in charge of accelerating the link between higher education institutions and regional economic development (Ji, 1998). The private sector was allowed to participate in the higher education sector, providing more opportunities for learners to access advanced education. The establishment of China's Social University in 1982 presented a radical change in reforming China's higher education system, as a private university coexists with public HEIs in this country (HEEC, 2017).

Higher education was at the state's expense and the state was also responsible for the employment of graduates. The employment system featuring "assignment by the state" and "graduates becoming cadres" were being implemented until the early (Gu, Li and Wang, 2018).

Too many single disciplines and too few comprehensive universities were China's higher education structure characteristics in this period as China's HEIs followed the former Soviet Union's school system (Wang, 2001). Moreover, the separation between theory and practice and the elite higher education era were other China's higher education issues 1990s in this period (Hui-min and Mei, 2007).

3.2. Increasing Qualification, Entering into Mass Education

Backward programs and curricula, the separation between theory and practice etc., spread over China's HEIs, preventing the education of high-level specialized talents in the early 1990s (Xu, 1995). Unless reforming the plan of teaching content and curriculum system, it could educate and nurture innovative talents.

As soon as the promulgation of *Outlines of Educational Reform and Development* in 1993, the MOE has no longer interfered universities' curricula as autonomous right in academics has been vested in HEIs, excluding principles of Marxism, general theories of Mao Zedong's thoughts, Deng Xiaoping's thoughts and 'Three representatives' (HEEC, 2017a). Morality and law, English, and computer science are also compulsory courses in undergraduate programs (Gu, Li and Wang, 2018). Hence, "The task of China's higher

education is to cultivate high-level specialized personnel with social responsibility, innovative spirit and practical ability, develop scientific and technological culture and promote the construction of socialist modernization (HEEC, 2017, p.7). In the true sense of the Western nation's prominent programs and curricula, China undergraduate programs were adapted towards practice-orientation, stressing graduates' practical capability and employability. In the true sense of the Western type of university, China started to initiate a reform toward comprehensive development within most HEIs. Through the merger of institutions, the collaboration between institutions and other operating forms, universities and disciplines were strengthened at the end (Morgan and Wu, 2011).

To welcome the challenge of global new technology reform, key universities have to educate their talented students at an international standard of qualification. Unless funding huge money for upgrading infrastructures, attracting qualified scholars, universities' responsibilities in educating talented students could never come true in China. Consequently, Project 211 formally started in 1995, and its selection principle was “*one ministry, one university and one province, one university, except high-level, key universities directly attached to the Ministry of Education*” (Dongping, 2011, p.356). Three years later, Project 985 was launched, aiming at establishing several world-class universities as China's universities were required to “play a critical role in implementing the strategy of invigorating the country through science, technology and education (Wang, 2011, p.35). The Chinese Government acknowledged thoughtfully that it would be economic inefficiency if selected universities were allocated the same budget for world-class status. 2 prestigious universities were selected to be invested for the world-class status; others were funded to be the world-known universities (Wang et al 2011).

The Action plan for vitalizing for the 21st century in 1998 pointed out that at least 15% of the population, in the cohort age groups from 18-25, to be enrolled for higher education by 2010 (Mai et al., 2019b; Yu and Ertl, 2010). Shifting from the era of elite higher education to the massification of higher education requires more HEIs. Unless accessibility of students, mass education would never come true in China.

On the one hand, Action Plan in 1998, China's Non-government Education promotion Law in 2002, Regulation of the PRC on Chinese foreign cooperation in school running in 2003, provided strong legal support for the development of non-government HEIs. Non-public HEIs were facilitated to be boned, and they received government subsidies in the form of cheap land and tax benefits. The subsidies and other incentives from the government would be reduced if they are for-profit institutions. In addition, the establishment of new colleges was encouraged throughout the country. However, some independent colleges began to be transformed into regular private HEIs within a 5 years schedule (Zhu and Lou, 2011).

On the other, students in all public institutions began to be charged tuition fees in 1997 (Houxiong, 2011). The central government has established subsidizing funds for disadvantaged groups to access higher education (Mok, 2002). In 1999, the Student Loan Scheme was piloted in several cities, and it has officially been deployed 3 years later. In 2000, General Commercial Student Loans Scheme was introduced. Unless accessing Student Loan Scheme, students have to pay at the market rate without any

subsidy from the government (Shen and Li, 2003). The Chinese government subsidies up to 50% of the interest rate, and the repayment period was 4 years after graduation in accordance with the first scheme. The employment system, in which the state assigns jobs to a minority of graduates and most graduates find jobs by themselves, replaces the previous design in setting employment since students in public institutions must be self-financed (Liu, 2017).

As a result, the gross enrollment rate of higher education reached 15% in 2002. China entered the early stage of massification, with several universities ranked in the global table league (Zha, 2011). However, the coin has two sides. To meet the requirements of enlargement in dormitories and other logistics for enrollment expansion, the Chinese government required commercial banks to provide more credit (Li, 2008). Although the MOE established the loan approval system for HEIs under its direct administration, excessive bank loans led many HEIs, namely colleges, into debt (Peng and Fang, 2007). In addition, the growth of comprehensive universities prevents the normal development of higher vocational education and impacts directly to rural education as the secondary teacher education for nurturing rural primary school teachers has been neglected (Zha, 2011; Mok and Wu, 2015). In addition, selecting key universities has encountered many conflicts in different interests because of criteria (Dongping, 2011).

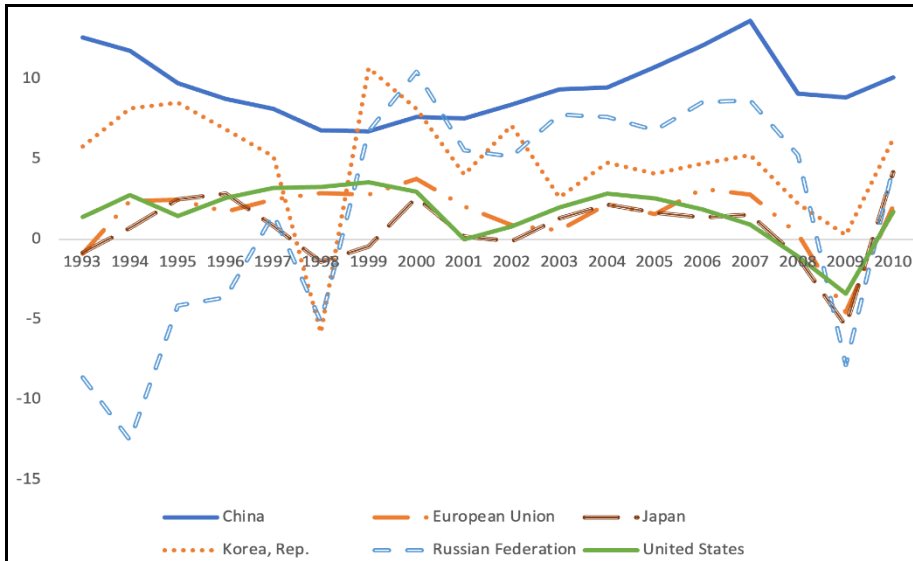
3.3. Strengthening Elite Higher Education and Reaching the Tail-End of the Massification Phase

China overtook Japan as the world's second-largest economy since 2010. The annual percentage of GDP per capita growth of China was higher than the US, European Union, Japan, and Korea from 2001 to 2010 (See Figure 1). The contributions of China's higher education to economic growth were so impressive. Therefore, the Outline of China's National Plan for medium and long-term education reform and development 2010-2020 asserted that by 2020 China's higher education would have vastly sharpened its global competitiveness. Strengthening elite universities, disciplines and reaching mass education at the tail-end phase were the priorities of the Chinese government at that time.

Project 211 and Project 985 were expanded to the second phase with increased participants and funding (Lou, Guo, and Shi, 2018). Tsinghua University, Peking University was oriented to be ranked highly in the top 50 international university rankings; several prestigious universities were targeted to be ranked in the top 200. The rest would be world-known universities.

Chinese scientific and technical journal articles nearly caught up with the US, and were 4/5 lower than European Union in 2015 (Worldbank, 2021b). The contributions of China's elite universities on economic growth were impressive. Therefore, the Central Party Committee and the State Council in China announced plans for the coordination and promotion of world-class universities and first-class subject building (Song, 2017). 42 universities have been designated as part of a 'world-class' project, and another 95 institutions are included to develop 'world-class' courses. The double First-Class Project was released in 2017 with the expectation of becoming a global higher education power by 2050 (Peters and Besley, 2018).

Figure 1: GDP per capita growth (annual %) - China, United States, Japan, European Union, Russian Federation



Source: Worldbank, 2021a

The 2010 Outline also set 40% of people in the cohort age groups from 18-25, successfully accessing higher education by 2020 (Lou, Guo, and Shi, 2018). Newly-built undergraduate universities have been promoted to be launch. Being a public institution, Newly-built undergraduate universities not only (i) promote the massification of higher education but also (ii) are geared toward the world of work and regional development. These universities are in charge of providing a highly educated workforce for the needs of regional development. 630 Newly-built undergraduate universities were in 29 out of 31 provinces and autonomous regions in China up to 2016 (HEEC, 2017). As a result, China’s massification of higher education reached the tail-end phase as 46% of people from 18-25 years old successfully accessed higher education in 2016 (Mai, 2019).

Table 1: The development of Higher education institution in China

	1978	1985	2005	2015
Total	598	1012	1792	2529
MOE		38	73	73
Other commission and central ministries		285	38	40
Provincial governments		691	1681	2416
Private		2	250	729
Newly-built undergraduate universities		-	-	403

Sources: Zhu and Lou, 2011; Gu, Li and Wang 2018, p. 35

Stratifications in higher education among elite HEIs and the rest intensified the equity in graduates' qualifications and their career opportunities. However, newly-built undergraduate universities could not compete with the old universities on academic research. Moreover, they had no competitive advantage compared to higher vocational colleges in training vocational talents (HEEC, 2017). Therefore, the massified system has recruited these sub-stand students to both colleges and Newly-built undergraduate universities, so it is not surprising to see the deteriorating quality of these graduates and lower productivity in the labor market. Hence, troubling graduates from these HEIs regarding job searching and career prospects (Mok, 2018).

4. Concluding Remarks and Policy Implications

Higher education plays an essential role in economic growth, and governments try their best to enhance the development of the higher education system, qualification, and accessibility aspects. However, the development of higher education differentiates across countries, depending on the intervention of each government.

The socio-economic development of China since 1978 pushed higher education reforming underwent intervention from the government. Private and public HEIs have been in charge of providing higher education to potential students. The MOE and the provincial governments have gained increasing authority in planning and administering. A new two-tier administrative system of higher education, "from central and provincial government and centered with provincial governmental management" (Dongping, 2011, p 322), has been established. Decentralization of higher education after 1985 was the platform for the development of China's higher education today.

Although the massification of higher education is an inevitable trend in the knowledge-based society, talented human resources could not be the outputs of the massified system. Talented students must be nurtured in elite programs. Therefore, establishing key disciplines and universities at global standards was the priority of the Chinese government. Shifting to the early stage of mass higher education came after that. Therefore, Project 211 and Project 985 were launched before the promulgation of the Action plan in China. The Chinese government ratified the second phase for these projects as some key disciplines and universities listed by global higher education rankings. The government also announced to obtain mass higher education at the tail-end phased. The Chinese government introduced Double First-class Project as soon as they expire Project 211 and Project 985. The Double First-class Project aims to turn China become a global host of higher education by 2050.

Although there were at least nine prestigious and other famous universities in China, China's strategy on establishing world-class universities focused on Tsinghua and Peking universities to invest in world-class universities' status. Chinese government targeted others at a lower position in global rankings, as world-known universities with several disciplines ranked on top 200 worldwide. The selected programs were not only globally attractive but also essential for regional development in China. The more high-ranking programs a university obtains, the higher a university's ranking would be. 36,8 and 33,1 billion Yuan were invested in Project 211 and Project 985, irrespectively by

China's central and provincial governments. The Chinese government intends to fund more than 40 billion Yuan on The Double First-class Project.

Although the decentralization of higher education was the platform for China's higher education, curricula adjustment was critical for qualification improvement to be recognized worldwide. Programs focused on enhancing specialized knowledge and skills to meet the requirements of a knowledge-based economy and strengthening students' political ideology for building up socialism with Chinese characteristics. The link between theory and practice has been required. In addition, transformative and adaptive majors/minors have been emphasized in China's higher education programs.

The Chinese government also deploys cost-sharing and other loan schemes to support students' access to higher education. Provincial governments determine tuition and fees for all HEIs located in their areas, including HEIs under the jurisdiction of central ministries. As a result, tuition fees at 211 and 985 universities would be lower than others are required. In addition, provincial governments have the responsibility not only for government allocation but also for distributing national subsidies to HEIs and government financial assistance to students.

Although the Chinese government decided to transform the Newly-built undergraduate university model into an application-oriented university model, stratifications in qualification and career opportunities exist among China's HEIs.

The role of government in helping to establish world-class university status and dealing with unintended outcomes from mass higher education have not been discussed in this paper, thus presenting a direction for future research.

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