Why does the state need research university?
--Reform and its motif

ZHU Yan

University of Oslo
Institute for Educational Research
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Abstract

Many states, motivated by circumstances beyond the campus, have conducted reforms in their research university systems across national borders. The rise of an informational society has put knowledge and knowledge production mode into such a significant position that both the state and the society expect the research universities as main producers of up-dated knowledge to be more accountable and more productive. The states often use the resource allocation to exert their influence on the research university system. But the pace and the scale of these reforms are affected by different national configurations, including the financial conditions, the state’s priority and the role of the state. The Chinese research university reform has been initiated in this knowledge-centred informational society. The background is shared with the US, Britain and Norway. But China takes a more technocratic, elitist, and centralized approach than these three countries. By analyzing the driven motif of the Chinese reform and comparing it to the other cases, the author reveals that the Chinese state has some particular concerns due to its political tradition: the research university should catalyze the economy on one hand, and legitimize and stabilize the sovereignty on the other hand. How far this vision can go against the background which requires an open society leaves everyone a question-mark.

Key words: research university; resource allocation; reform; knowledge production; financial condition; priority; state’s role
# Table of Content

Abstract ............................................................................................................................. i

Table of Content ............................................................................................................. ii

Figures ............................................................................................................................... v

Tables ............................................................................................................................... vi

Abbreviations ................................................................................................................... vii

Chinese Glossary .......................................................................................................... viii

Acknowledgements ......................................................................................................... ix

## Chapter 1 Introduction

1.1 Personal distillation and the background of this study ........................................ 1

1.2 Problem statement and research questions ......................................................... 4

1.3 Intentions and delimitations ................................................................................... 7

   1.3.1 Intentions of the research ............................................................................ 7

   1.3.2 Delimitations ............................................................................................. 8

1.4 A word on research method ................................................................................. 9

   1.4.1 Policy analysis ............................................................................................ 9

   1.4.2 Second source data collection ................................................................... 11

   1.4.3 Small-scale comparative study .................................................................. 11

1.5 Thesis structure ...................................................................................................... 12

## Chapter 2 An informational society—putting knowledge first

2.1 Knowledge and information is the social productive force ................................ 15

2.2 Knowledge production under fire ....................................................................... 18

2.3 The rise of service mentality and crisis of research tradition ............................... 20

2.4 Summary ................................................................................................................. 24
Chapter 3 The US, Britain, and Norway—a similar move, different strategies

3.1 Several models visited.................................................................................................27
   3.1.1 The American liberalist model.............................................................................27
   3.1.2 The British conservative model...........................................................................33
   3.1.3 The Norwegian social democratic model.............................................................39

3.2 Similarities and differences identified........................................................................46

3.3 The reform and its motif............................................................................................47

3.4 Summary....................................................................................................................49

Chapter 4 An articulation of the reform strategies

4.1 The financial conditions of the research university..................................................50
   4.1.1 The mechanism.....................................................................................................50
   4.1.2 The consequences.................................................................................................53

4.2 The states’ concerns...................................................................................................54

4.3 The role of the state....................................................................................................57

4.4 Summary....................................................................................................................59

Chapter 5 China—A reform in practice

5.1 A chronological sketch of 1990s reform...................................................................62

5.2 Central to local, small to big.....................................................................................63

5.3 Only feed the big ones...............................................................................................65

5.4 Diverse funding, more stakeholders.........................................................................70

5.5 Who is empowered and who is de-powered?..............................................................73

5.6 Summary....................................................................................................................77

Chapter 6 Discussion and conclusion

6.1 China’s development gateway—technology rather than science.............................82

6.2 Prosper philosophy and social science studies carefully.............................................84
6.3 Motif behind the policy change ................................................................. 86
6.4 Conclusion ............................................................................................... 91

Epilogue ....................................................................................................... 95

Appendix--the Old Legacy ......................................................................... 98

References .................................................................................................. 107
Figures

Figure 1.1 Logic of the thesis and focus of this study
Figure 2.1 Post-industrialism: dynamics and trends
Figure 3.1 R & D at colleges and universities by source of funds, FY 1953-2003
Figure 3.2 Trends in federal research by discipline, FY 1970-2004
Figure 3.3 Sources of research funding for higher education Institutions in UK (2002-03)
Figure 3.4 England’s multi-channel funding system for higher education
Figure 3.5 Distribution of the returns from the Fund for Research and Innovation in Norway, 2005
Figure 3.6: Distribution of the proportion of the returns from the funds for research and innovation channeled via the Research Council of Norway according to prioritized areas, 2000-2004
Figure 5.1 R & D funding by discipline in HEIs
Figure 5.2 R & D personnel in HEIs
Figure 5.3 Sources of research funding for higher education institutions in China (2004)
Figure 5.4 Power structure in Chinese universities
Tables

Societal and educational trends and changes in China
Abbreviations

CCP: Chinese Communist Party
CSTC: Chinese Science and Technology Statistics Bureau
HEFCE: Higher Education Funding Council in England
HEI: Higher education institutions
HESA: Higher Education Statistics Agency
ICT: Information Communication Technology
KMT: Kuo Ming Tang
MOE: the Ministry of Education
PKU: Peking University
R & D: Research and Development
RCN: Research Councils of Norway
RUC: Renmin University of China
S & T: Science and Technology
### Chinese Glossary

<table>
<thead>
<tr>
<th>English</th>
<th>Chinese</th>
<th>Pinyin</th>
</tr>
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<tbody>
<tr>
<td>academic capitalism</td>
<td>学术资本主义</td>
<td>xueshu zibenzhiyì</td>
</tr>
<tr>
<td>border region</td>
<td>边区</td>
<td>bian qu</td>
</tr>
<tr>
<td>Communist Youth League</td>
<td>共青团</td>
<td>gong qing tuan</td>
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<tr>
<td>cooperation</td>
<td>合并</td>
<td>he bing</td>
</tr>
<tr>
<td>deans</td>
<td>系主任</td>
<td>xi zhuren</td>
</tr>
<tr>
<td>faculty party committee</td>
<td>院党支部书记</td>
<td>yuan dangzhibu shuji</td>
</tr>
<tr>
<td>joint construction</td>
<td>共建</td>
<td>ke jian</td>
</tr>
<tr>
<td>imperial examination system</td>
<td>科举</td>
<td>ke ju</td>
</tr>
<tr>
<td>integration of production, learning and research</td>
<td>产学研一体化</td>
<td>chan xue yan yitihua</td>
</tr>
<tr>
<td>let one hundred flowers bloom, one hundred schools of thought contend</td>
<td>百花齐放，百家争鸣</td>
<td>bai hua qi fang, bai jia zheng ming</td>
</tr>
<tr>
<td>key memorandum</td>
<td>工作要点</td>
<td>gongyao yaoian</td>
</tr>
<tr>
<td>mass-line</td>
<td>大众路线</td>
<td>dazhong luxian</td>
</tr>
<tr>
<td>party committee</td>
<td>党委</td>
<td>dang wei</td>
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<tr>
<td>party secretary</td>
<td>书记</td>
<td>shu ji</td>
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<tr>
<td>political calibre</td>
<td>政治素养</td>
<td>zhengzhi suyang</td>
</tr>
<tr>
<td>president</td>
<td>校长</td>
<td>xiao zhang</td>
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<tr>
<td>presidential responsibility system</td>
<td>校长负责制</td>
<td>xiaozhang fuze zhi</td>
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<tr>
<td>private local-run elite academy</td>
<td>书院</td>
<td>shu yuan</td>
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<tr>
<td>professorial rule</td>
<td>教授治校</td>
<td>jiaoshou zhixiao</td>
</tr>
<tr>
<td>readjustment</td>
<td>调整</td>
<td>tiao zheng</td>
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<tr>
<td>red and expertise</td>
<td>又红又专</td>
<td>you hong you zhuang</td>
</tr>
<tr>
<td>State Council</td>
<td>国务院</td>
<td>guowuyuan</td>
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<tr>
<td>teaching and research offices by discipline</td>
<td>教研室</td>
<td>jiao yan shi</td>
</tr>
<tr>
<td>the people</td>
<td>人民</td>
<td>renmin</td>
</tr>
<tr>
<td>three representatives</td>
<td>三个代表</td>
<td>san ge daibiao</td>
</tr>
<tr>
<td>vice-president</td>
<td>副校长</td>
<td>fu xiaozhang</td>
</tr>
<tr>
<td>vice-secretary</td>
<td>副书记</td>
<td>fu shuji</td>
</tr>
</tbody>
</table>

### Chinese Names

- Cai, Yuanpei 党元培
- Deng, Xiaoping 邓小平
- Li, Lanqing 李岚清
- Mao, Zedong 毛泽东
- Qian, Xuesen 钱学森
- Jiang, Zeming 江泽民
- Tao, Xingzhi 陶行知
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Chapter 1 Introduction

1.1 Personal distillation and the background of this study

I was an undergraduate student in economics. I learned from the beginning that economics is built on one important assumption: resources are limited while human desires are unlimited. The ultimate task of an economist is to deal with this fundamental contradiction. As a Chinese, I was also taught that China, while having capacious land and affluent natural resources, has to live with a huge population. It makes resource allocation always a hard task for the Chinese government. Equalitarian way of allocation was once adopted to make every individual entitled to obtain the same amount of resource. But later on, people argue that it is unfair and inefficient if their capacity varies. They say, if those more capable ones cannot get more resources, this country will end up in backwardness.

The contemporary history of China is full of turbulence. This situation gets more benign after the Cultural Revolution, particularly after Deng Xiaoping crafted the economic reform and open-door policy. Only two ways left in front of the Chinese people, Deng gave a very strong notion, to catch up or to perish. He emphasized that if China lost this opportunity again, then it would be driven out of the world stage forever.

China’s economy started to take off in 1980s, when the growth in GDP relied on

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1 Despite of the risk of being criticized as un-objective, I still use the personal pronoun “I” throughout this thesis whenever a completely individual action or opinion is discussed. The use of “we” is avoided since there are no co-authors in this work. When reporting actions, I use “one” or “the reader” instead of “we”. Also I may use a passive construction in some conditions.

2 It was a ten-year upheaval during 1966–76, a mass mobilization of urban Chinese youth inaugurated by Mao Zedong, attempting to prevent development of a bureaucratized Soviet style of Communism.

3 Deng Xiaoping (1904—1997) was a leader in the Chinese Communist Party (CCP). Deng, though never holding office as the head of state or government, served as the de facto leader of China from late 1970s to early 1990s. He raised important concepts as “Socialism with Chinese characteristics” and initiated economic reform and Opening-up Policy. Under his tutelage, China has maintained the fastest economic growth in the world while keeping the Communist Party in tight control. (Sources: Wikipedia Retrieved September 9, 2006 from http://en.wikipedia.org/wiki/Deng_Xiaoping)
the expansion of a labor-intensive industry. Cheap manual labor symbolizes the Chinese competitiveness. Entering 1990s, a remarkable era with dramatic development in information communication technology (ICT), China, like many other countries, needs to interpret national competitiveness differently. It means quickness in updating information and knowledge base and capability of making value-added application. The core of this value chain is science and technology (S & T). Thus the higher education institutions (HEIs) in China, as the major producers of S & T, become more important than ever before.

Some key HEIs have got a huge amount of government funding in the past decade. They use the money to build infrastructure, and to facilitate exchange programs with overseas partners. Many HEIs also began to benefit from a closer university-market partnership: fee-paying vocation-oriented courses are booming⁴; those pure research are giving way to the applied ones that are “more oriented toward pragmatic links with enterprises,… which could turn a quick profit” (Hayhoe, 1996: 126). Those financially-affluent HEIs are ambitiously competing with their international rivals. However, not so many institutions are that lucky. My university, Renmin University of China (RUC)⁵, is a special place to train the high-level government cadres, famous for its humanity and social science studies, accommodating quite a few distinguished scholars in philosophy, religion studies, history, economics, journalism, and law. Its campus was small and cramped; buildings were shabby; and low-paid teachers had little access to ICT-based teaching and little

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⁴ The major Chinese websites, such as www.sohu.com, www.sina.com, www.tom.com, are nowadays proliferated with commercials, advertising short-term training programs on management science, MBA study, foreign language study, and certificate exam preparation. Universities provide teaching staff, place and reputation guaranteed for success, while the business sector networks in with its purse.

⁵ RUC derives its origin to the birth of CCP’s higher education system. It could be traced back to 1937 when CCP established its cadre training college in northern Shanxi Province, called Shanbei Public School. Hayhoe (1995: 117) regards RUC as a kind of central ideological body and a training school for high-level bureaucrats through the decades. Therefore, RUC impresses the public as the second Party University. This image has changed gradually. Though RUC does have some study fields in science, it is humanity and social science-oriented and enjoys a high academic reputation in fields such as philosophy, history, law, journalism, economics.
cooperation with foreign colleagues. In 2003 my university got a new president, who had years of experiences in the Ministry of Commerce and the Ministry of Education (MOE). He, shortly after, invited the state Chairman for a visit. It was a turning point not only for my university, but for the non-polytechnics research universities in general. I saw funding immediately flowing into those faculties labeled as national key research disciplines, such as economics, law, finance, and business administration. Though it is hard to tell whether the financial affluence will bring about academic competitiveness and quality, the well-being of faculty and students are truly enhanced in terms of higher salary, increased interaction with foreign institutions, more buildings and Pentium IV computer rooms, and spacious student dormitories.

Seeing this rapid shift, I wonder what makes this young state, less than half a century, so powerful that its policy would have tremendous impact on these older research universities, most of which were established many decades before the Chinese Communist Party (CCP) came into power. Since 1990, the Chinese state

6 Geiger has made detailed analysis on the American research universities. His understanding of “research university” is illuminating to this study. There are many quantitative indicators to distinguish a research university from other higher education institutions, for instance liberal arts colleges, or professional schools. These indicators include the number of PhD produced, the volumes in the library, the money expended for research, the ranking in the quality of faculty as judged by their academic peers. Besides, there are also other arenas crucial to evaluate a research university. The first is the acquisition of social resources; the second is the capability of universities to convert resources into research; the third characteristic is the extra supply of resources for research (Geiger, 1986). As we can see, resource, mainly funding, is a most important factor in the formation of research universities in the US. The university’s fundamental commitment to research and advancing knowledge is also a crucial criteria. In my analysis, I use Geiger’s notion of research university. It has to be acknowledged that apart from research universities, other institutions of higher learning also conduct research. But they are not seriously committed to research as an institutional goal, and they lack capability of accumulating research resources. Thus this study applies to those research universities. Often they are more prestigious within the national higher education system. The states’ policies towards these universities reflect the states’ overall concerns. Since these universities are the major laboratory conducting research and producing knowledge, resources available and accessible to them can be regarded as a key factor in evaluating the role society expects them to play and the priority the state places on them.

In the case of China’s universities, this study focus on those institutions expected to have “the training and research capabilities to assist in the economic changes needed for a research-based economy” (Altbach, 2004). These universities are key academic and research institutions which absorb most of the resources to develop research capability. Altbach (2004: 21) is aware of the fact that many universities in China face the challenges of expansion while no commensurate increases in the state public finance occur. However, the state shows great commitment to ensure that at least part of the national higher education system is well prepared to function in the informational and knowledge society. To understand how the state treats that part of the system motivates this study.
started to study the economics of higher education system. On one hand, economy needs more labor which are better-educated. This demand opens a market for the mass higher learning, which urges the state to allow the private sector more autonomy in running university. On the other hand, the state has put so much money into a few research universities, which forms an elite group. Though the state allows the market in, it does not let the private sector take over the public role in regulating universities. Why is the state particularly interested in some research universities? The reason is that they are politically and/or economically significant. Thus, reading the state policy will help me to understand certain political and/or economic imperatives that the state wants to address through regulating a group of prestigious HEIs. Since the availability of resources to a great extent differentiates research university from other HEIs, the funding policy becomes a most important indicator. This thesis intends to study the research university reform in China since 1990, a domestic reform in a globalized informational age, also a reform addressing state’s political and/or economic needs through reforming higher education.

1.2 Problem statement and research questions

Universities’ political, economic and societal function is not a new issue. Tracing back the history, I can see that universities once served the needs of ideology, such as church-based universities in the middle age; once responsible for cultivating an elite class, such as the old “Ox-bridge” and the “Ivy League” universities; during industrialization they were places for training qualified labours. In China, the modern university formation was quite late; nevertheless, the ascent of Chinese tradition in higher education has been illustrated thousands of years ago in Daxue, one of the four books: “the way of great learning involves understanding and practising virtue, renovating the people, and abiding by the highest good…ultimately regulating family

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7 Chapter five will present more details on this issue.

8 Daxue literally means university. In traditional China, it means advanced learning as well as the institutions where such learning takes place. It is among the four books and five classics which are must-read for students and scholars in the ancient China and it conveys the Confucius spirit of higher learning.
affairs, rule the country and pacify the world” (Self translation, in Sishu Wujing—Daxue, 2003: 1). Contemporary Chinese universities, just like their western counterparts, are not ivory tower. But what the universities are now facing seems to be something very different from before. In many countries, the governments take huge efforts to conduct university reform. They believe that prosperity in university research will correspondingly generate prosperity in economy. This belief gradually changes the nature of research and university education. Universities now have stronger economic function than ever before. Furthermore this function is increasingly institutionalized through the government policies. The society is better prepared to accept this change than decades ago. The logic behind this change is simple enough. Since knowledge is a key to economic growth in this information age, since universities generate knowledge and help to transfer it into real gains in numbers, the government then will be delighted to enhance the role of universities.

However, in many countries, the university share of state financial expenses is decreasing. Academics need to seek external resources to sustain their research through cooperating with business/industry⁹. I see this phenomenon within a changing global political economy. Since early 1970s, the capitalist world experienced the coldness of a steep economic slide, called “oil crisis”. The crisis mentality developed at that time to deal with the fiscal problems became the norm for higher education as well. In the US, it proved particularly successful to handle the financial stringency while preserving the quality of universities in a transitional period from industrial society to a brand new era characterized by multinational economic giants and global resources flowing. Policy makers are always fascinated about this success, but they seem to be less interested to ask why the US succeeded.

The US experience was to bureaucratize the institution and to make higher

education a private good, so that higher education can incorporate the non-public sector, such as multinational enterprises. University research and teaching became a service to the stakeholders. This novel idea suggests that universities, just as other businesses, can be a business itself, a manufacturer supplying products, an industry making great profit. The competitiveness of US higher education has convinced its international counterparts that this is a most efficient way of training a workforce for the informational economy, which definitely serves the society well (Shumar, 1997).

This is a general picture of higher education system. Does it apply to the research university? Geiger notices that, quantitatively and qualitatively, the research universities claim the lion’s share of research in the US. They graduate more than half of country’s PhDs, responsible for a majority of expenditure on university research, evidently concentrate leading distinguished scholars and own most high-quality academic departments (Geiger, 1986: 262). He was analyzing the American research universities in the first four decades of 20th century, but in the final section, he precluded that the growing federal contribution to research universities will continue to mingle in complex ways with private resources, and forge ahead the diverse social linkage (Ibid: 267). Nowadays researchers have found out that Geiger’s hypothesis was precise10.

The state may embrace the laissez-faire policy which accords with a global market economy, may be unwilling to take the financial burden of supporting the overall higher education system, or may lack an effective mechanism to control the universities. Nevertheless, for the public research universities, those prestigious ones, the state may not hesitate to give strong fiscal support. The pattern of how states fund research universities can illuminate the state’s financial situation, interpretation of public role, priority of national development, and legitimacy of the regime. My main question is how the Chinese state, which aims high in polity and economy, has addressed its interest through research university reform in terms of resource

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10 See Burton R. Clark (1995) for case study in the Federal Republic of Germany, Great Britain, France, the United States and Japan.
To answer this main research question, I further address several supporting sub-questions:

1: How has the Chinese state changed its resource allocation structure in 1990s research university reform?

2: What has been the impact of these policy changes in the research universities?

3: What might be the driving-forces of these policy changes?

Putting China into a world atlas to identify some similarities in the research university reform and other peculiarities, I intend to answer two more questions:

1 What have been the changes in the state funding policies towards research universities in several western cases?

2 What concern the states when they initiate these reforms?

My expectation is that some case studies will help me to understand the Chinese condition. As shown in figure 1.1, the small comparative study, as an important component of theoretical analysis, is intended to shed light on the Chinese case.

1.3 Intentions and delimitations

1.3.1 Intentions of research

Firstly, I intend to analyze the global political economy as the background for the changes in higher education policy. The role of knowledge and information has become more important with the rise of an informational society, which makes universities more crucial as a place for knowledge production. The function of research university is getting more contested, since it is not clear if university should cater to the political expediency, contemporary social issues, or alleged long-range benefits of science.

Secondly, this study will briefly analyze the research university reforms in the United State, the Great Britain, and Norway. These three systems have distinctive national configurations of research universities, but face the similar global pressure to
maintain excellence in advanced education and research. I shall synthesize these cases into a hypothesis that there are several major factors which normally influence states’ funding policies. They are national financial conditions, the state overall development strategies, and the role of the public sector.

The ultimate intention of this study is to understand China’s research university reform since 1990s, including the consequences and the motifs. Compared with the US, Britain and Norway, what makes the Chinese state policy different? Whether the Chinese government has the same concerns as the Americans, British and Norwegians? Whether China has some other anxiety? When there is urgent university demand for resources on one hand and governmental sympathy for an expanding private sector on the other; when there is need to immediately boost economy on one hand and long-term academic excellence on the other; when there is traditional legacy on one hand and strong foreign influence on the other; when an open society is required to establish a technological base for economic development on one hand and ideological conservatism sustains on the other, Chinese research universities face difficulty to gain a good balance.

1.3.2 Delimitations

Time delimitation

The time focus of this study starts from 1990. The last decade of 20th century was a pivotal period for China’s research universities for at least two reasons: firstly, the 1989 Tian’anmen event brought about aftermath political conservatism and ideological control over university teaching and research; secondly, starting with Deng Xiaoping’s journey to the southern China in 1992, China’s economy took off in an astonishingly fast speed (Hayhoe, 1996: 127). Politically and economically, the Chinese government has aimed high for its research universities (Li, 2004). Many

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11 Li, Lanqing, in his capacity as the Vice Premier in China from 1993 to 2003, was the key person in the Chinese government responsible for the national education policies. *Education for 1.3 billion* was originally written in Chinese, in the form of an extensive interview. Li Lanqing prefaced the book, and soon after it was translated and published in English.
important policies have been issued and come into force since 1990s, and their impact has sustained to the contemporary times.

*Theme delimitation*

To make a thorough analysis of the state policy concerning research universities cannot eliminate the interaction between the university and the society, and the relationship between the state and other stakeholders. This constructs a helix of the state, market and university, within which the tension between any two will affect the third. However, this thesis mainly deals with the relationship between the state and research university not for simplification, but due to the fact that the state is the main actor in a transitional context such as contemporary China. Intensive studies have shown that the reform in general is a state deliberation. Through resource control, the state always has the most profound impact upon the research university (Carnoy & Samoff, 1990; see also Castell, 2000b; Neave & Van Vught, 1994).

### 1.4 A word on research method

#### 1.4.1 Policy analysis

This thesis talks about policy changes, the impact and motif. Thus policy is both a starting point and a thread linking up the rest. Since policy analysis is a major analytical tool in this thesis, it is necessary to identify the main characteristics of policy documents and the process of analyzing policies.

Education policies can be divided into different levels: policy at the national level, policy in the state/provincial level, policy in the institutional level, and policy in the faculty level. In this thesis, I am dealing with the national level policies. To define the national policy is a hard task, varying among countries. In China, the national policy is often understood as a code of conduct decided by the government (or the party) in order to achieve their main task. Rhetorically, it should represent the interests of the majority to regulate and to lead the people (Cai, 2002). Cai pointed out that many Chinese definitions of the national policy faced criticism, saying that they overemphasized the Party’s role while neglecting other social actors. “Policy” itself
does not have an encompassing definition. However, as Cai also mentioned, the Chinese definition of policy precisely shows some Chinese characteristics in how the government understands it, and formulates it.

The differences between the state policy, party policy and government policy are quite ambiguous in China\textsuperscript{12}, since the CCP is extremely powerful in policy making, implementation and supervision. The majority of the government officials are the CCP members, though there are a few from other democratic parties as well. The government issues its policy after multi-party negotiation, during which the CCP plays a pivotal role. The CCP, the government, together with other parties constitute an invisible form called “state”. This state structure is similar with the west, where a state normally includes “government, parliament and other decision-makers” (UNESCO; cited in Cai, 2002: 22). What makes China different is that the CCP is such a powerful entity that one can see enormous institutional overlapping among the CCP, the central government and other policy-making bodies (Cai, 2002). In China, the CCP, the state council and the MOE are three major educational policy makers. The CCP, in principle, guides the other two.

Thus when I analyze the Chinese policy documents, I need to be aware that they reveal the ruling party’s ideology. They are quite homogeneous, no challenging to themselves. Though issued by different agencies, they are based on the same principles. Chronologically still it is possible to detect differences in educational policies, showing the ruling party’s responses to the new challenges in polity and economy. For instance, since 1994, policy documents, leaders’ public speeches, regulations, and outlines, started to mention “university scientific and technological innovation” very frequently. Integrating teaching, research and production is put onto agenda. In spite of such changes, slogans and propaganda, such as adhering to CCP’s rule, strengthening character and political education in universities, have maintained

\textsuperscript{12} In this thesis, I use the state education policy and government education policy in an interchangeable manner. I do not intend to mix them up; concerning the Chinese situation, there is no significant difference between these two concepts. I add a footnote if there is any exception.
since 1990, even become more intensive.

1.4.2 Second source data collection

In addition to the policy documents, e.g., legislations, regulations, officials’ memorandum, I draw heavily on four types of second source data and literature, searching with key words like knowledge production, the informational society, research university, academic professionals, the state, the Chinese higher education. These four sources are websites of government and non-government organizations, books, academic periodicals and educational open forum. I refer to the organizations’ websites for most of my empirical data, including figures and tables. I turn to the books and periodicals for thought-provoking analysis. The books have more detailed elaborations on the topic, while the periodicals offer up-dated discussions about the new issues. The newspaper and open forums give me access to different insights.

In social science studies, no single picture can grasp the target concept one wants to measure. But to analyze one concept, in this case the research university reform, from different dimensions—the state policy change as main forces and the political economic concerns as a driving motif—can give me a more solid analytical base about why it all happened since then and what are the effects and follow-up consequences.

1.4.3 Small-scale comparative study

Some researchers argue that comparative education research has gone through a long historical journey, gradually becoming a governance tool (King, 2000; Novoa & Yariv-Mashal, 2003), for policy makers to reform their own system of higher learning with the knowledge of other systems. Currently comparative education research takes

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13 Governments’ official websites include the US., Britain., Norway and China four countries. And non-government organizations include international organizations (World Bank, IMF, UNESCO), multinational enterprises (IBM, Microsoft), associations (AAAS), universities (PKU) and survey companies (Statistic Empire).

14 This can be either in electronic version or paper-based.
the mission of exploration, explanation, argument, prediction, recommendation and theory development (Fairbrother, 2005). Whitty, Power and Halpin (1998), in their study of five countries’ education reform dealing with the school-state-market relationship, cautions against the naive belief that policies designed in one context can be unproblematically transported elsewhere. Policy-makers are often criticized for looking overseas for solutions to the domestic problems, while neglecting the distinctive historical and cultural dimensions of their policies. I am aware of this “false universalism” (Ibid: 31-32) when I choose the comparative approach to study research universities in China. However, similar to anthropology, in which the researchers refer to other cultures/subcultures as a mirror to reflect our own being, I intend to place China into a broader international system to see why the similar global pressure results in many types of university reforms differing in pace and scale. In Chapter Three, a comparative study is to illuminate the differences and similarities in three countries’ reforms, articulating why these convergence and divergence happen.

There are several types of comparative studies in the educational research. The continuum goes from theoretically-grounded studies looking for causal explanations through testing complex models of the education system and their variants, to a descriptive study collecting comparative data on one or several indicators of the educational systems. The goal of theoretical comparison is to improve policy formulation and implementation, while the less theoretical one aims to provide useful, precise information on a few simple variables, thus to enhance an understanding of the situation. In the thesis, I use a descriptive comparative approach. Learning about these three research university systems contributes greatly to constructing a theoretical framework of this thesis.

1.5 Thesis structure

The preceding sections have been discussing why this study is relevant and valuable (personal experience and study background), what I am going to analyze (main and sub research questions identified, limitation and delimitation), how to carry out this research (research method). In Chapter Two, I shall pay attention to the role of
knowledge and knowledge production in an informational society, in which all the activities are organized around the generation, diffusion and reproduction of knowledge. Knowledge production shifts from curiosity-driven to a somewhat service-oriented mode. This challenges research universities in their academic nature and fundamental functions.

Chapter Three takes a look on research university reforms in the US, Britain and Norway, illustrating similarities and differences. In general, the states’ approaches fall into three main categories, address the governments’ different concerns.

In Chapter Four, analysis goes behind these strategic approaches. I argue that it is not only the objective financial condition that concerns the state, but also how the state prioritizes its mission facing the situation, and how it sees its role in addressing this priority.

In Chapter Five, I turn to the research university reform in China, to understand some elements unique to this context. It deals with the policy changes, and how these rhetorically-claimed changes get manifested inside campus, how they influence funding structure, power structure and academics.

Chapter Six synthesizes the overall findings and discusses the reform motif of the Chinese government.

This thesis also has texts for an epilogue and an appendix.

The epilogue raises a simple case which I confronted in the later stage of writing. I find the case relevant to my thesis in two aspects. The first is the preferential policies of the leadership towards some disciplines against others. The second is the power structure in the Chinese research universities.

The appendix contains the pre-reform background information in China. Tracing back the evolution history of the modern Chinese universities, this part is for the readers of interest.
Logic of the thesis and focus of this study

Box I  Main research question: How the Chinese state, which aims high in polity and economy, has addressed its interest through the research university reform in terms of resource allocation

Different strategies

Box II  The objective financial status;
       The interpretation of the public role;
       The state priority.

Similar motif and trends

Box III  The knowledge production pattern;
       The research university’s function and task

Box IV  The research university reforms in three western countries and their domestic consequences

Pilot comparative analysis

Box V  The university reforms in China since 1990s, as a major part of the Chinese economic reform

affect

Box VI  Change in the resource allocation structure alters the administrative structure, power structure, and academic work

reflect

Box VII  Speculated motif of the reform, reflection on Box II and Box III

Figure 1.1 Logic scheme and the focus of study. Black arrows and black parenthesis compose the theoretical framework of this thesis (Chapter 2-4); Grey arrows and grey parenthesis make the specific analysis of Chinese case and focus of my discussion (Chapter 5-6).
Chapter 2 An informational society—putting knowledge first

As I have mentioned in Chapter One, the research universities, for a long time, have other political, economic, and societal functions than a pure pursuit of truth. However, a new version of globalization takes place since 1980s, when the information technology proliferated, personal computers became popular, and communication went instant. This new version, called by Friedman (2006: 10) “globalization 3.0”, has stimulated an information/knowledge revolution. This new version, backed up by the fall of the Berlin Wall and the rise of a global free-market economy, empowers every government, every company and every individual to compete and collaborate with each other. What will then be the appropriate mode for knowledge production in this new era? As the main provider of new knowledge, will the research university have new functions? Referring to Box III in figure 1.1, in this chapter, I shall analyze the knowledge production mode and the task of research universities in this informational society.

2.1 Knowledge and information becomes the social productive forces

Castells’ notion of “informational society” is a key concept in this section. What is an informational society? It indicates that to conduct social or industrial activities nowadays shall be supported by the generation, processing and diffusion of knowledge and information, more fundamentally, by the rapid spread and widely use of information technology (Castells, 2000a: 21; see also Castells, 1989: 12-15). Castells sees knowledge and information as a thread which links up all the changes occurring in contemporary world, as the raw material on which the technology has an effect. People might argue that the centrality of knowledge and information was already evident in the previous technology revolution, but “what characterizes the current technological revolution is … the application of such knowledge and information to knowledge generation and information processing/communication devices, in a cumulative feedback loop between innovation and the uses of innovation” (Castells, 2000a: 31). This is a new socio-technology paradigm, within
which the social institutions interact with knowledge in a different manner. Christopher Freeman (1988) precisely pointed out that, this paradigm is a cluster of interrelated technical, social and organizational arrangements which constitute certain mechanisms of input and production. This new revolution makes the shift from energy-based input to knowledge-based input, which has its origin in the microelectronics and telecommunications technology advances. This revolution requires a technological base, including the creation and development of internet and rise of a network society (Castells, 2000a), a new value theory, which sees knowledge and information as the most valuable resources (Bell, 1980), some institutional arrangements, such as quality university education. Allen (1992: 169-220) draws a scheme to illustrate the complex mechanism from knowledge/information in the central to different trends in the periphery.

Figure 2.1 Post-industrialism: dynamics and trends (Allen, 1992: 183)
Figure 2.1 shows how the information/knowledge diffuses its influence and brings about structure adjustment.

In technological dimension, the information technology catalyzes a wireless network society where different economies can participate. The use of knowledge can increase economic productivity and the rate of profit by, for instance, rearranging capital into a powerful position vis-à-vis labour (Castells, 1989).

In structural dimension, the rise of a service sector substitutes the manufacturing sector; multinational corporations, holding the knowledge property and the power of purse, are becoming more influential in making national policies and setting global economic order; knowledge production concentrates in the higher decision-making level, while the implementing units widely decentralize; the group who possesses knowledge and information, such as technocrats and knowledge elites, has the power to decide.

This figure also shows the institutional dimensions of this informational society, such as bureaucratization and hierarchies. According to Coarse (1998), the founding father of the institutional economics, it is in effect the institutions—legal system, political system, social system, and educational system—that govern the economy of a nation. The transitional states, or conditioned capitalist countries in Carnoy and Samoff’s term (1989), often have such institutions that are economically inefficient, placing these nations in great disadvantages. In these countries, states do not derive their legitimacy from mass participation. People stick to family/communal kinship to build their social fabric. Nowadays, these economies are learning from the capitalist society, tied closer to the dominant foreign giants with the advanced technology and the power to set the market regulations. Carnoy and Samoff (1989: 20) conclude that “(this type of states are) conditioned by the nature of the peripheral role that its economy plays in the world system and the corresponding enormous influence that the dynamic of metropolitan capitalism has on its development process”. These countries were labelled as the “third world” before; but now they are differing tremendously in their capacity to be integrated into this informational global economy.
Newly industrialized countries (NICs) in Asia have built their solid technological basis. Large continental economies, such as China, are the most dynamic economies nowadays, with largest stock of human resources. Losers are those still marginalized in the global world and remaining peripheral to the knowledge and information. What distinguishes the winners from the losers is not the social recognition of the significance of knowledge, but the existence of an efficient institutional mechanism, benign to generating knowledge or to borrowing from foreign countries and to use it productively. The winners’ secret is their ability to provide a fitting environment where the seeds of technology can grow and blossom. The future of those transitional economies largely depends on how they transform their economic and educational organizations and how they relate their R & D work to the production (Carnoy, Castells, Cohen & Cardoso, 1993: 7). Thus the timing issue facing the conditioned capitalist states is to establish this mechanism for knowledge production and application. Institutions of higher learning, particularly the research university, deemed as the crucial elements of this mechanism, are themselves undergoing a critical transition.

2.2 Knowledge production under fire

I have referred to some researchers for the remarkable role of knowledge in this informational society. The research universities, always in the pursuit of truth, a provider of modern science and technology, have caught more attention nowadays. The states and societies expect them to be more productive to benefit the national development and social progress.

Tracing back to the very beginning of modern research universities, I find that the people’s understanding of what the research universities should produce has shifted from the ideological indoctrination, to the Renaissance-inspired empiricism, to the philosophy-based scientific theories, to a more complex and contested idea in the contemporary times.

Gibbons et al (1994) has written an influential report called the new production
of knowledge: the dynamics of science and research in contemporary societies, in which the authors gave two contrasting modes of knowledge production. Mode I refers to the traditional way of producing knowledge, transdisciplinary, heterogeneous, hierarchical, and institutionalized within those universities privileged to claim scientific authority. Mode II emerges as a supplement to Mode I in the context of “parallel expansion in the number of potential knowledge producers on the supply side and the expansion of the requirement of specialist knowledge on the demand side” (Gibbons et al., 1995: 13), application-oriented, disciplinary, homogeneous, and participatory. Participants are more reflective to the process and outcomes, and “everyone becomes an active agent in thinking critically to find out a solution and to carry out evaluation of performance, leading to a greater social accountability and reflexivity” (Welle-Strand, 2000: 221). Knowledge production is not exclusive to other social institutions, such as industry, enterprises, research lab. People are not only concerned with the knowledge itself, but the “marketability” (Gibbons et al., 1994: 46) of knowledge as well.

Raschke (2003) argues that Mode II is more flexible and more decentralized compared to Mode I. In Mode I, the sequence of teaching and learning is top-down. Research is conducted within a laboratory. The criteria to evaluate expertise are quantitative, such as the highest degree obtained, years of working experiences, affiliation with professional societies. Mode II is de-centralized and non-hierarchical. Small unit-based innovation plays an important role. Research and teaching does not have a fixed sequence. Knowledge is produced to meet the diverse demands of the clients. Time and place are very flexible. “Anytime, anywhere” (Ibid), knowledge can be produced. Knowledge elitists are those who can apply their knowledge to the practicality, be responsive to the customers and have interdisciplinary background.

Cummings (1998) also raises some distinctions between the science-oriented mode and the service-oriented mode. He argues that the service-oriented mode emphasizes economic potential and academic competence of the research outcome. The science-oriented mode is more rigid in setting research agenda. By contrast, the
service-oriented mode provides more flexibility in time and space. The old mode seeks resources based on the quality of academic work, while the new one is based on contract. Furthermore, in the science-oriented mode, knowledge is produced through research rather than teaching; however, in the new mode, they are regarded as parallel units both contributing to the knowledge production.

To summarize these perceptions, knowledge now becomes a product ready to be delivered once the clients place the order, and knowledge production turns out to be a service more participatory and flexible. The research universities have for many years used most of the public resources, functioned as the state knowledge tank, stood on the top of academic pyramid, impressing the outsiders with extreme complexities, non-stop pursuit of knowledge motivated by curiosity, and unfathomable argument behind the closed door. People inside the door, often being called scientists, thinkers, or intellectuals, produce invisible products, which do not have a clear date of application. Now the legitimacy of traditional research university is challenged (Cummings, 1998; Well-Strand, 2000). Society wants to simplify all these complexities, demystify the sacred studies, and make purely curiosity-driven research more accountable.

2.3 The rise of service mentality and the crisis of research tradition

During the one thousand years’ evolution from Paris and Bologna to the early 19th century, the research function of universities has not been emphasized. The university, more stable than many other social institutions, was deemed as a place for teaching and learning, through which knowledge could be passed on. But changes started in Germany, early 19th-century, since “ideology and interest first came together powerfully and in a sustainable fashion to turn research into a university phenomenon” (Clark, 1995:15). Von Humboldt regarded teaching, reviewing old ideas, and research, creating new knowledge, as a unity among the universities’ imperatives. He, in 1810, wrote a memorandum shortly before the Berlin University got established, arguing that those who created knowledge were most able to spread it to others, thus all the professors should not only teach, but perform original research
as well. He also believed that both teachers and students had their justification in the common pursuit of knowledge. Teachers’ performance depended on, and also affected, students’ interest and critical reflections. They had relationship as co-researchers (Humboldt, 1809/1970). The Berlin University was the first modern university in the world, critically carrying research and explicitly supporting “an unceasing process of inquiry” (Clark, 1995). Humboldtian ideal of a proper university, as a magnet system, attracted young academics from all over the world, among which thousands of Americans scholars and a few Chinese educationist became enthusiastic converts.

In the last decade of 19th century, new private universities—John Hopkins, Stanford, Chicago, Cornell—were established in America to accommodate the growing research imperative. At the same time, Peking University also came into being. This university became significant after Cai Yuanpei, once studying in France and Germany, was appointed as the Chancellor. The years he spent in Europe were manifested in his efforts to introduce Humboldtian model into the Chinese context. He tried to establish a mechanism, within which the academic freedom and university autonomy could be protected and academics were motivated to endlessly inquire into the nature of the world. This mechanism, according to the Stanford’s president Gerhard Casper (1998), guarantees a crucial condition of success, gifted students being attracted and interacting with teachers in a non-hierarchical manner. Universities can, thus, become great places where the process of inquiry can be least distracted from the state and market.

As a revolutionary idea, the unity of research and teaching was profoundly influential in the birth and development of the modern research universities in different countries. It has represented the formative model of what a university should look like. In many countries, this enduring principle of research university usually means the state commitment in financial support, relatively small enrolment and high cost of university education per student\(^1\). The whole system can be well sustained

when the total size of higher education is small. Nevertheless, will it still work, when more students want to go for university education, when a society needs more introductory or intermediate level of university education? The German Humboldtian doctrine is “in an awkward muddle” confronting the rapid growth of the university system (Clark, 1995); The Israeli research university is in a similar dilemma that the majority of students may just need college education for national purposes, but Israelis find it still worthwhile for the government and society to invest heavily on a small group of the top graduate students (Magidor, 2000); Cummings (1998), Currie & Tjeldvoll (2001), and Welle-Strand (2000) notice that the social democratic model of the Norwegian public research universities, just like its foreign counterparts, is in transformation due to the tensions in a pragmatic balance between knowledge service for the market needs and the critical, independent research.

Critiques arise that the university research outcomes are not always relevant to the economy; at the same time, these institutions may inefficiently consume a lot of public resources. People doubt whether the states should keep running these traditional research universities, or whether they need to redefine the role, the function and the activity of these conventional academic institutions (Cummings, 1998; Kivinen, 1999). The increasingly complex, ambiguous and controversial relationship between the university, society and the state asks for a new model, a model called “the service university”. Service is defined as “the delivery, the installation, and maintenance of knowledge-based applications to clients wherever they may be” (Cummings, 1998: 1).

Some readers might recall the concept of “multiversity”. As the president of University of California-Berkeley, Kerr stated in 50 years ago that the American university was gradually indistinguishable from other business enterprise because it

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produced an invisible but valuable product—knowledge. He foresaw that the knowledge industry could boost economic growth since 1950s just as machine and energy once contributed to the industrial revolution. He further illustrated that the universities would become more alike to the industrial manufactories, and the university professors would take on entrepreneurial characteristics. By the definition of “multiversity”, university would produce a small group of elite “thinkers” at the top, large group of technicians in the middle and reach all level of social demands at the bottom (Kerr, 1963: 1-35). Kerr’s “multiversity” differs tremendously from traditionally applauded model of research university. It is still not clear if his prediction will come true finally; however, the higher education system now is truly more diverse than before, with liberal arts colleges, polytechnics and comprehensive research universities to meet different expectations. Among these forms, the research universities accumulate most of the resources (Geiger, 1986).

Analyzing the financing pattern of higher education in four western countries from 1970s to 1990s, Slaughter and Leslie (1997) theorize “academic capitalism”, meaning that “institutional and professional market or market-like efforts to secure external money” within academia. They argue that academics in the public research universities, in the US, UK, Canada and Australia, facing diminished governmental expenses, try to seek alternative resources to sustain their research work; on the other hand, university research and development (R & D) as a source of national wealth creation is increasingly institutionalized (Ibid: 208-213).

Marginson & Considine (2000) explore into Australian universities, which are becoming “transnational bureaucratic corporations whose logic is corporate rather than cultural”. They see universities in the forefront of the communication revolution and an enlarging global market, where the non-public sector can detect economic interest and business-like management finds its way.

Some scholars criticize the notion of “academic capitalism”, “multiversity” or
“the enterprise university”\(^2\). Raschke (2003) sees the logic of business model of education still business-as-usual. He argues that the university education can collaborate with the business but the core value of academia should not be sold at a certain price in the market. Shumar (1997) similarly cautions against the commodification of scholarship and university research. He argues that the capitalism has reshaped the university to serve both the democratic civil education and the utilitarian skills training. But these two ends are very hard to be in harmony. The consequence of marketizing universities is, as mentioned by Jacoby (1994), that the university system is still stratified, with elite groups dominating the prestigious ones, while the masses enter the universities not for some social good, not for research, not even for knowledge and skills. To them, university education means nothing except for a degree which they can exchange for a job. The implications of corporate control and commodification of knowledge production has made the university education decline to an instrumental concern for nothing but the bottom line—a symbol (Lasch, 1995).

No matter how controversial the recent changes are, universities are becoming more significant in this global market economy, featured by a substantive role of hi-technology and information. The research universities are at the crossroads, since every country wants to be part of the dynamic world economy and a functional higher education system is the crucial infrastructure (Castells, 1994). Good universities can bring the nation advantages when there is competition. Most, if not all, of the governments expect university to become the national development gateway in updating S & T and cultivating intellectuals (Carnoy, 1999b); nevertheless, they use different policy tools and develop various models to reform research universities according to their own national conditions.

2.4 Summary

In the chapter, I analyze knowledge and the informational society. These two concepts constitute the crucial components of the theoretical framework. The rise of an informational society has placed knowledge and information onto a critical position, where they become raw material, the input and output, the ends and the means of a value chain. To win this global innovation economy relies on the national capacity of generating, diffusing and utilizing knowledge and information. To build this capacity requires a mechanism, benign to the generation and dissemination of knowledge. This urges relevant R & D, relevant to the practical application. This also explains why those mature capitalist nations can usually do a better job than the conditioned capitalist countries.

As knowledge becomes more relevant to the national development, the knowledge production model also changes from the theory-heavy, curiosity-driven pure research for excellence to a problem-solving, project-based participatory, applied research mode (Gibbons et al, 1994; Well-Strand, 2000). This new mode, being non-hierarchical and more interdisciplinary, supports practical research to meet the contracts of both the private and public clients (Cummings, 1998; Tjeldvoll, 2003).

The research universities, as the main arena for knowledge production, have faced heated discussions and debates on whether the states and societies need the service university or the traditional research university, or, if both, where lies the optimum level. Criticism of the traditional research university points to the lack of socio-economic relevance of university research. It argues that the research university should be more adaptive to the needs of national development. The global market economy is also hostile to increase public spending on the research university, but at the same time the global economic competition is getting more fierce that the state demands a good performance of higher education as a “think tank” and a human resource manufactory. Opponents of the service university idea are cautious about commercializing academia and knowledge. But for both sides, the point is not to eliminate the research university, but to make them more competitive, both academically and economically. Governments, longing for the competitiveness in
global markets, are dedicated to this very best scenario of research universities. In the next chapter, I will make a small comparative study on the changes in the state funding policies in the US, Britain and Norway. Their similarities and differences shall shed light on my further work.
Chapter 3 The US, Britain, and Norway—a similar move, different strategies

I have pointed out in Chapter Two that the challenges confronting the contemporary research university are not exclusive to any particular country or economy. In contrast, it is a global trend. However, the same force in different countries is accommodated differently. The political tradition and economy condition are among the most influential factors (Cummings, 1998). Before I analyze the states’ prior concerns when they reform the research universities, I need to take a close look at those reforms in the three national configurations: the United States, Britain, and Norway. They have distinctive patterns of coping with a similar global economic/political pressure on research universities. The reason why I choose them will be briefly stated in the following sections. I expect that these cases could represent a broader global picture about how the national governments are balancing with great efforts between local and global, economy and academia, how the strategies differ due to their financial condition and political tradition.

3.1 Several models visited

3.1.1 The American Liberalist model

The United States deserves a close look. The American graduate school system is so prominent, plural and structured that it, like a magnet, attracts competitive students worldwide and produces a huge number of PhDs every year. This system is getting more competitive despite of the “ups and downs of federal commitment” (Clark, 1995: 132). This research-centred structure was largely influenced by the ten thousand young scholars who returned from Europe in 19th century. Their enthusiasm needed accommodation, thus academic research was institutionalized within universities. At that time, the research funding was mainly internal. During the two world wars, when external agencies such as governmental and military organizations found interest in research and advanced learning, the universities started to get huge amounts of
external funding. Institutions became larger and longing for scientific excellence. The cold war witnessed an explosion of governmental funding in research. After the war, federal sources retreated, leaving space for the non-federal organizations (Clark, 1995). Making the non-public sector involved does not weaken the American research universities. They grow strong, diverse, academic, and efficient as well. I believe that the US has something distinctive which would be interesting to know.

Who pays for university research?


Figure 3.1 shows that the federal funding counts for the main part of university R & D expenditure over the past 50 years. The state and local governments also offer a steady part. Institutions generate their own revenue from tuition fees and endowment funds. Industrial sector has, over the years, been a supporter. The overall funding base, as seen in the figure, has grown more diverse. For the public research universities, the percentage of federal and state funding is far more significant. Though hugely dependent on the federal funding, those public ones have, for a long time, enjoyed a diversified funding base, “partly institutional, partly private patrons, partly national
and state government” (Clark, 1995: 125), which is believed to be a particular advantage for the US research universities to preserve their autonomy. Slaughter and Leslie (1997), Slaughter and Rhoads (2004) find that the public research universities in the US have confronted a shortfall of federal funding support at the institutional level, instead, this part being given to the students directly. In addition, the US government, concerned with competitiveness, sets laws and policies to encourage patenting and to protect copyright, which stimulates university to cope with business. This further diversifies the source of research funding. Applied natural sciences, agricultural sciences and engineering have substantially drawn their revenues from the contracts and grants with private patrons, while the humanity, some social sciences, and pure natural sciences have much fewer chances to externally generate any revenue.

*Where does the funding go?*

There are more than one hundred institutions in the US that can be safely called research universities. I can hardly find any rigid federal policies to direct specific university research. Instead, there are 50 state-subsystems varying in their own policies. This allows room for quick adjustment to avoid disastrous consequences of a systematic error. The university has autonomy to decide what to do and how to do it. Whatever the society demands, it will be found in the campus soon after. If one trial proves to be successful, it will quickly be replicated in other institutions. This “permeability to influences from the larger society” is a greatest strength of American research universities (Rosenzweig¹, 2000). Whether university should be adaptive to the social needs? The American answer is a resounding “yes”. Rosenzweig, as a representative of the university people, argues that the American research universities are willing to respond to any client, but some core values of the university research should always be kept intact.

¹ Rosenzweig, Robert M. was the president of the American Association of Universities (AAU) during 1980s. AAU was the first voluntary form of cooperation among top American research universities, led by fourteen institutions.

Figure 3.2 reveals that research in engineering and high technology, during the Cold War, was more heavily funded than any other fields, since at that time the US national defence system urgently needed military weapons to safeguard the national security. Since late 1980s, this part has given way to civilian research, with downsizing support from the Department of Defence. In contrast, biomedical research funded by the National Institute of Health dramatically increases. Other fields have also slightly increased, differing in magnitude.

A common opinion is that the government always funds basic research while the industry does not show much interest in that. Branscomb\(^2\) (2000) says this is not always true. He understands the big corporations’ investment of basic research within the universities as a visionary strategy which works for invisible future gains, such as human capital. He mentions that IBM has an annual spending of 500 million USD on the laboratory research, not expecting that they really can produce something annually.

\(^2\) Branscomb, Lewis is the former vice President and Chief Scientist of the IBM Corporation and the former Chairperson of the US National Science Board. He presented his opinion in Israel Academy.
worth that amount of money; rather, this type of investment gives the company choices of new technology and science, and more importantly, allows the corporation to hire qualified graduates from the research universities in the future.

The American research universities embrace entrepreneurial management, emphasizing social relevance as well as academic excellence. When funded by and cooperating with external stakeholders, the university can set the rules and restrictions on which part is for sell and which not. As the Dean of MIT Graduate School, Professor Litster (2000) says, the university people try all the time to get a fair balance between their educational purposes, including research, and the knowledge production which can benefit the society.

The American research universities also try to avoid labelling some disciplines as important and others as not. The idea of a research university is to create a community of smart and motivated people, who can inspire and educate each other. The impact of such community can be very unpredictable, as stated in the BankBoston’s survey *MIT: the impact of innovation*. It shows that the social science and management graduates account for 13% of electronics firms, 27% of other manufacturing firms, and 26% of software companies, while the engineering graduates account for 45% of the companies in finance and 33% of the management consulting firms (the Economic Department of BankBoston, 1997: 24). This is a good illustration of the research university’s spillover effect to overall societal development.

However, as figure 3.2 shows, the governmental decision on funding allocation still prioritizes some disciplines over others. The federal R & D funding policies need to take fiscal annual budget into consideration first, rather than the scientific logic. The negotiation about how to allocate the funding might turn into fights between political parties over the national priorities. Politicians who understand little about the logic of science development are drafting related policies. In the US, the federal decision making is also a game process among its 50 states, every state having some voice in the Senate. One university in the New England, say the Boston University, might lose the funding to some more inferior college in another state simply because
senators from that state need to support at least one college within that state anyway. But in New England, there are simply too many universities crying for funding.

Recent changes in the funding policies and the nature of academic work

A decreasing government support to the public research universities is becoming obvious since 1970s (Slaughter & Leslie, 1997). This accelerates the integration between faculties and external funding providers. The traditional perception allows the public research universities to be financially supported by the government; but once the money arrives, universities are entitled to decide where to spend the money. But nowadays, the government reduces the appropriation to the research universities; at the same time, it asks for much more accountability of public-funded university research. Some scholars complain that the government provides 30% of their research funding and causes 90% of their headaches (Ibid: 239). This pushes the research university to initiate partnership with the service sector. In another word, the university’s function as a social/economic service is becoming more institutionalized. The percentage of the service activity in the research universities in US had increased 30% from 1980s to 1990s.

The faculty is stimulated to outsourcing for external resources, which may create gaps among different academic units. Some faculties can generate substantial amount of revenues while others have fewer products which can be sold. The pressure for prestige maximizing and resource maximizing might squeeze the regular teaching hours (Casper, 1998). The traditional pattern of a shared governance and the strong element of faculty control can be eroded by the overly administration (Altbach, 1999). However bad the scenario might be, after three-decade ups and downs of federal support, the US research university system is still globally competitive. Casper (1998) attributes this to a successful university-industry-government partnership, which he called the “non-secret” of the American research universities’ prominence. This partnership functions as enrichments to, rather than distractions from, the university research and graduate students’ capacity building. Universities are always longing for “steeples of excellence” rather than simple mechanical training for engineering or
technicians. In such collaboration, the universities maintain their autonomy and adequate academic freedom to set research agenda, not subordinate to any business or political imperatives.

3.1.2 The British conservative model

The Britain’s university system is among the oldest in the world, famous for its “collegiate” tradition---low student/teacher ratio, intimate student tutorials, college structure, sharp selection and high quality, small undergraduate-centred system---exemplified extremely in the Ox-bridge system (Clark, 1995). Oxford and Cambridge, called the old universities, monopolized the England’s higher education until the 19th century. Scotland, building a subsystem, had four universities dating back to the 15th and 16th century. Despite their cultural influence, university education was a marginal activity in Britain in terms of numerical intake. The British universities by and large built their own financial basis, raising funds from private benefactors, which enabled them to sustain autonomy from the state. This stateless but elitist system has survived for centuries until the state financial support substantially increased in the mid 19th century. Since then it gradually became so nationalized that it was caught in deep problems when the government sharply cut its budget in 1970s. This system, in 1980s, found itself farther lagged behind America, Japan and continental Europe in academic production and brain competition. This gap has motivated Britain to reform in the recent decades.

Who funds the university research?

The British government has, since early 20th century, conceived of its university system an important part of the national system, which consequently increased university’s fiscal dependency on national government. So far the British government still claims that the prime responsibility for academic quality and standards rests with the HEIs, acting individually and collectively, and that the state shall demand proper accountability for the substantial public funds invested in the

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3 As Clark (1995) mentions, grants from the state more than doubled from 1920 to 1946.
higher education (Aslen, 1996). But this commitment became fairly expensive to the government budget in the late 1970s. Relying on a single funding base was already incompatible with the institutional autonomy and accountability.


The Higher Education Statistics Agency (HESA) presents a series of financial and funding records, showing other funding sources apart from the government. From figure 3.3, I can see that tuition fees, educational grants and contracts now account for a big percentage of the total research funding, though the public funding still amounts to nearly two fifths. Britain is different from many other countries in that it financially takes care of the private institutions as well as the public ones. The private benefactors include fee-paid short-term course attendants, overseas self-financed student (tremendously increasing over the years) and other customers with a variety of demands.

Figure 3.4 shows the research funding system of England, similar to the situations in Scotland and Wales.
England’s Multi-channel funding system for higher education

Figure 3.4 England's Multi-channel funding system for higher education involves both public sector (shade boxes) and private sector (white boxes) funds. Sources: HESA finance record cited from Sir Brian Fender (2000)

The public funding, represented by the shaded boxes, mainly comes from the Department of Education and Employment, and State Sci-tech Office. About 3/4 of the funding from Department of Education and employment is paid to the Higher education Funding Councils in England, Scotland and Wales, aiming to sustain a good research environment. (In Northern Ireland, it is paid to its Department of Education). The remaining 1/4 is paid through local authorities in the form of waived tuition fee to those needy students, this part decreasing in recent years.

The State Office of Science and Technology, another important supporter of university research, puts money into the pockets of 8 research councils, respectively
in charge of different fields. Their statutory control is exercised by the Department of Trade and Industry. The Director-General of Research Councils advises on the allocation of national budget of science, currently about 3 billion pounds. Each research council makes funding evaluation within its own specialization.4

**Funding for what?**

The higher education funding councils make their decisions based on several criteria, among which the discipline is a most crucial factor. Funding councils firmly state that some fields need more resources than others (HEFCE, 2005). Though being slightly adjusted over time, this criterion remains stable that different disciplines are given cost-and-yield points. Based on these points, the funding councils will appropriate certain amount of money. Clinical stages of medicine research, dentistry and veterinary research often have the highest points, science and technology listed as the second, other laboratory or field work-based studies ranking the third and the rest having the lowest score. Eight research councils are affiliated with the Office of Science and Technology in UK. They do include an Arts and Humanities Research Council and an Economic & Social Research Council, but funding priority is always given to the scientific research for an effective partnership between the university, business sector and the society.

Before 1992, traditional self-governing universities were funded separate from the local authority controlled polytechnics and colleges. The 1992 Further and Higher Education Act put polytechnics under the funding councils and granted them university status and power to issue the national-recognized degree. The polytechnics and colleges can compete equally with the traditional research universities for resources, funding and personnel. Year 1992 also witnessed the establishment of Office of Science and Technology, showing the state commitment to develop hi-technology.

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4 Information concerning funding councils and research councils in UK are retrieved March 2006, from Higher Education Funding Council in England Web site [www.hefce.ac.uk/](http://www.hefce.ac.uk/) and Research Councils in UK Web site [http://www.rcuk.ac.uk/about.asp](http://www.rcuk.ac.uk/about.asp).
The public funding has a side of being utilitarian and technocratic, prioritizing those fields which can generate immediate economic gains. At the same time, the government also believe that a core mission of the public funding body is to enhance the mind of thinking and advancement of knowledge. The long-term academic excellence is just as important as the short-term economic relevance and competency building.

**The nature of changes**

For centuries the British higher education has been regarded as an elite system with high quality, high level autonomy, free of government intervention, and strong fiscal support. Since 1960s, the British government increases funding to initiate the nationalization of higher education, which “then produced a virtual quantum leap in top-down control” in 1970s when state budget abruptly retreated (Clark, 1995). Further expenditure cuts occurred since 1980s when the funding councils decided to evaluate different subjects’ merits according to RAE (Research Assessment Exercise). Though the British government integrates polytechnics and college into a unitary higher education system, their chances of getting resources are much rarer than the research universities. The universities get more than 90% of the total funding and accommodate 8 times more full-time postgraduate students than the polytechnics and colleges.

One major change in Britain, similar to the US, is a stronger market force. On one hand, the governmental subsidies to HEIs have been greatly reduced. A more thrifty state will have to rely on alternative sources, such as tuition fee, industry contract and private donations, for its revenue (Clark, 1995). Academic capitalism is obvious in Britain that the academics switch to alternative sources to secure their research funding (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004). On the other hand, the government always wants more to be done with less money, quality

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5 RAE, taking the scale and the subject into consideration, uses “peer-review” as the main method. Almost all the research project shall be assessed. After assessment, quality grades will be assigned to each application. Those scored highest are most heavily funded.
maintained or even enhanced. Thus the professoriate group is overloaded with work, in both teaching and research (Altbach, 1999). The power of senior academic faculty is weakened, though they still have their voice in decision-making. Instead, senior administrators are given considerable power nowadays. A practical solution is to adopt a dual administrative system, in that the senior faculty elect a rector presiding over the academic affairs, and the government appoints a chancellor responsible for purely administrative work. The rector rejoins the academic cadre after serving for a short term, while the chancellor stays in the position for an extended period. As the administrative structure expands and gets more eager for external resources, the chancellor has more power and the professoriate gradually lose influence. This creates academic’s resent towards non-academic group (*Ibid*).

There is also another change, as Clark (1995: 71-74) identifies, that research is gradually separated from other higher education activities to distinguish research universities from teaching-oriented liberal arts colleges. A few HEIs, including Oxbridge, Warwick, are expanding research activities while keeping by-taught programs in a moderate scale. Many other institutions are becoming more teaching dominant, unavoidably more difficult to compete with the research universities in academic status. Sir Brian Fender (2000), as the leader for the HEFCE, stressed the importance for diversity in higher education, but the situation will not be improved until new criteria are released. Comparing the numbers, the research universities obtain 90% of the total public funding and 3/4 of the research personnel, maintaining huge advantages over the liberal arts colleges majoring teaching.

The British government, along with its funding councils, once had cosy relationship with the research universities (Clark, 1995). This cosiness has now disappeared, since the government laid a heavy hand on the research universities in the 1970s. Heavy fiscal constraints on universities, more fee-paid overseas students, booming short-term training courses, and enthusiasm in global brain competition have pushed the British research universities into a jungle survival race. The current structure and results are very controversial: quantitatively, British scholarly
production ranks the second highest point internationally (Sir Brian Fender, 2000); qualitatively, some distinguished scholar claims that the quality has been well preserved (Clark, 1995); different voices say that many structural tensions have come up with the newly reform, due to the fact that the assumption of quality assurance is invalid in that the complexities of academic life cannot be captured and encoded into an “at-a-glance league tables of excellence” (Morley, 2002); lack of integration, vision and participation in decision-making deteriorates university education’s responsibility and the professional standards, which has caused many unintended consequences (Bleiklie, 2002; Kogan, 2002; Morgan-Klein & Murphy, 2002).

3.1.3 The Norwegian social democratic model

Norway is an interesting case. According to Cummings (1999), the Norwegian national revenue has been increasing steadily, but the government still believes that the higher education needs to be more independent from government funding. The state has re-directed the academic research and restructured research funding system since late 1980s. It has been so far quite clear that the government likes to see the university research more market relevant, though this attitude faces criticism and suspicion.

A sketch of the recent reform

The Norwegian higher education system primarily consisted of universities, specialised colleges and state colleges. The six state-funded universities, covering most disciplines, have traditionally had high academic autonomy. 6 specialised state-level colleges, organized in the National Council of State colleges, focus on different fields, such as agriculture, architecture, and music. Both universities and specialised colleges can conduct research. The difference is that the colleges normally cater to regional needs and area development.

Before the 1994 reform, Norway has about 100 regional and vocational colleges. In 1991, the government presented a White Paper on Higher Education. This paper aims to establish a network of higher learning, based on the principles of
specialisation, cooperation and communication, and to encourage more resource competitions for teaching and research. It historically integrates executive power and accountability into this social democratic state (Currie & Tjeldvoll, 2001). This White Paper results in the 1994 higher education reform which reduced regional colleges’ number to 26.

In the Report no. 39 to the Storting (1998-1999) Research at the beginning of a new era, the government actively stated, and actually fulfilled, its support to the university research: 3 billions of funding along with establishment of the Fund for Research and Innovation; a real growth of 27 per cent in public funding since 1999, among the fastest in the world; the Skattefunn scheme was introduced from 2002 to give Norwegian enterprises tax relief for investing in research. So far the Skattefunn scheme has generated more than 3.5 billion NOK for the industry. The Report no. 20 to the Storting (2004-05) Commitment to Research restated the research imperatives. The government plans to put 3 % of its annual revenue for the research university R & D by 2010. It further stresses the importance of integration and cooperation between the university and a wider society.

A single funding agency:

The Fund for Research and Innovation was established in 1999 with a capital of NOK 3 billion to provide a basis for long-term stable research funding. Since then, the fund has grown rapidly and its returns constitute a major part of the governmental research appropriation. The capital is invested as a government deposit loan with a ten-year fix-interest period. The yield from this fund is to implement research priorities from the previous report, part of which is directly channeled to HEIs, part indirectly through the Research Council of Norway (RCN) (Stortinget, 2004-2005). The RCN was established on 1 January 1993. Before, there were five research councils, and they were all closed on the day when the RCN came into being.

Figure 3.5 illustrates that, in 2005, 910 million NOK out of 14 million is given to the RCN for the state lottery compensation. The remaining 671 million given to the
RCN is appropriated with guidelines to fulfill the priorities. But the fund also entitles the RCN to make independent appropriation and assessment. This structure has not been tested in any other countries. But it has gone through careful design and discussions since 1989, when the government presented a report to the Parliament on research funding. All parties concerned supported this idea, in spite of some disagreement about the new council’s internal structure.

The RCN is contemporarily led by an Executive Board, under which there are six research boards: industry and energy; bio-production and processing; environment and development; medicine and health; culture and society; science and technology. One director heads the Board along with six co-directors, each responsible for one research board. The RCN is a national advisory and executive organization for research. Its work includes trans-disciplinary and inter-sectoral research activities, international research cooperation, researcher mobility and recruitment, quality of research, evaluation of research institutions and dissemination of research results.

Figure 3.5 Distribution of the returns from the Fund for Research and Innovation in Norway, 2005, NOK million Sources: Proposition no.1 to the Storting (2004-2005)
The Norwegian government regards this single funding system as the most important reform strategy in 1990s. The reformers believe that this all-in-one research council will always function as a unity rather than six different units. If this unity can sustain, then the funding body has a chance for greater flexibility between disciplines and sectors. The council can have better transparency and higher accuracy when making funding decisions since six boards may easily exchange information, avoiding unnecessary competitions over resources. An international evaluation company, Technopolis, concluded after a research project on different countries’ innovation systems that this Norwegian style functions better since the research council was closer to the specific ministries than to the research community. Politically, it makes funding appropriation more accountable.\(^6\)

However, a single funding agency has its own disadvantages and critics. Figure 3.5 shows that the largest part of public funding goes into the RCN. This part is increasing over the years at the expense of decreasing direct funding for the universities. Thus the universities face more fierce competition to fight for funding, and they are forced to seek for external resources from industry and business. As Currie and Tjeldvoll (2001) quotes in their interviews with academic people, most respondents have experienced reduction in government funding. They try to find alternatives to sustain their work, for instance providing fee-paid courses, collaborating with industry, shifting to applied research, being integrated into EU program, and cutting down the cost.

In the Report no.20, the RCN will continue to play a key role in the Norwegian innovation system, as an advisor both for the researchers and policy makers. They


have to set priorities, evaluate the cost-benefit and feasibility, and monitor the implementation. Thus, RCN needs to mediate actively and productively between the government, research communities, industry, society and other clients.

*Where the funding goes?*

In report no.20 (2004-05), Norwegian government claims that its funding policy has always been made after comprehensive dialogue with research communities, society and private sectors, rather than being top-down imposed. It admits that research in S & T gets more resources. The government also recognizes the basic research as “important to future creation of value” (Rep. No. 20), which deserves full attention and support as well as the applied research. It may not generate immediate economic utility, but can enhance the understanding of essentials. The report also specifies Norway’s research strengths to be the long-term basic research and four thematic areas—ICT, marine research, energy and environment, medical and health-care research.

![Figure 3.6: Distribution of the proportion of the returns from the Funds for Research and Innovation channeled via the Research Council of Norway according to prioritized areas, 2000-2004, NOK million. Sources: Research Council of Norway](image-url)
Figure 3.6 elucidates a stable government commitment to the basic research: the total amount of funding has slightly increased since 2000. However, its percentage of total funding decreases due to the rapid growth in other prioritized fields. Funding that goes to the Center of Excellent (CoE) somehow compensates for this shrinking percentage in basic research funding. Norway has so far initiated 13 CoEs to strive for an international standard of academic research\textsuperscript{7}. Genome-research witnesses a jumping increase since 2001. Management and administrative research has small growth in funding. Four prioritized fields also experience proportionate rise in the financial support from the RCN.

\textit{The growth of industrial R & D:}

The business and industry sector is a very supportive partner in Norway’s R & D system. In 2003, statistics show that half of this country’s R & D investment comes from the industry sector, amount to 13.4 billion NOK. However, compared with many other countries, the business and industry sector in Norway still scores low in research intensity (Rep. No. 20, 2004-05). Only one out of five companies in business and industry is involved in R & D work. These companies are exclusively large enterprises. Additionally, though the industrial R & D expenditure has increased for 15 percent from 1999 to 2003, only a very small fraction, about 374 million, goes into the universities and colleges, where the government makes up for the rest. The government’s policy change can stimulate the industry and business sector to take on more R & D in two different ways. One is through direct support. The government-funded R & D in industry is decreasing in many OECD countries; nonetheless, in some smaller economies like Norway, it is increasing. Apart from that, the government can also encourage R & D investment through tax deduction (\textit{Skattefunn} scheme). The second way is to establish a partnership between industry/business and

\textsuperscript{7} Relevant information about CoE and RCN is referred to the RCN Web site: http://www.forskningsradet.no/servlet/Satellite?c=Page&cid=1138785831669&pagename=ForskningsradetEngelsk%2FPage%2FStandardSidebar
HEIs. The university’s special advantages in human resources may encourage the entrepreneurs to cooperate. The sources of research funding in HEIs will also get diversified through this cooperation.

The academic’s perception and attitude

The scholars’ attitude on the recent changes in the Norwegian research universities diverge. As Cummings (1999) argues, the national ideologies shall shape the receptivity to “service university” idea. Refer to his comparative study, the countries undergoing political or economical crisis are more receptive to change from a tradition mode to a service mode, such as Russia and Indonesia. Nevertheless, no crisis has happened in Norway. Throughout the history, the Norwegian universities have always maintained a high level of academic autonomy. Thus Cummings finds that the suspicion and hostility towards a service university is more evident in Norway than in other cases.

This echoes a study on resource allocation crisis and university’s social relevance in the University of Oslo (Welle-Strand, 2000). People criticize this university to be too isolated from the reality. The local clients claim that their contact with this university is poor. As the largest and oldest university in Norway, the University of Oslo seems to be a provider of irrelevant research and education, meaning that it is not practically supportive to its students, society as well as the government. When the university leaders (including rectors, eight deans and chairs of faculties and departments) discussed this serious issue in 1997, most were still skeptical to this shift from academic-oriented to service-dominant. Some expressed their consent but asked for guarantee that the shift should not least harm the independent research. Only one dean and one chair favored the service idea.

During 1998-1999, Currie and Tjeldvoll (2001) carried an interview-based study in the University of Oslo, focusing on the academics’ perceptions about the university governance, research and teaching accountability, privatization of education, future role of universities etc. The majority of interviewees wished to see university become
a critical thinking tank of the society, protecting and enhancing people’s capacity in reasoning and reflecting. Most scholars agree to retain tenure professors and dislike to be increasingly managed by the bureaucratic. They are concerned with the entrepreneurial trend in the universities research in Norway, but felt powerless. They were overwhelmed by the demands from stakeholders: accountability and usefulness of their work. Still some scholars are optimistic. They believe that the classical rationale of university as a free and vacuum place for truth searching should be modified. The new substituting rationale is to function as a knowledge enterprise, which offers valuable services to the society (Ibid).

3.2 Similarities and differences identified.

The research universities in these three countries have faced dramatic policy changes in funding structure, research orientations, power structure, and the nature of scientific research. The governments address their commitment in supporting university-based R & D; they emphasize the role of traditional research universities in advancing science and technology, in cultivating generations of intellectuals enormously valuable for national development. Nevertheless, they simultaneously recognize that in order to be efficient, the government has imperative to collaborate with the private sector, and, more importantly, to encourage mutual support between the research university and industry/business.

In these countries, entire new research fields have emerged and thrived in the university campus, such as business management. Interdisciplinary research proliferates. The states prioritize those fields which either have particular strengths to win the global competition, or crucial to build their scientific competency. The rationale of tenure has been challenged that it contradicts accountability and fosters lazy, unproductive academic rather than protect academic freedom and research autonomy. The power of professoriate group also gets weakened by a rising administrative group. Tenure and full-time academics are declining in number, while the number of part-time and non-permanent faculty members is increasing. This change in the labour force has significant implications, as Altbach stresses,
“Fewer well-qualified young people will be attracted to academe if they realize that they cannot look forward to a full-time career. Average salaries will decline as the profession increasingly consists of part-time and temporary junior staff. Research orientation and productivity will decline as fewer professors are focused on research. There will be less institutional loyalty and commitment, and the university will have fewer professors to participate in governance” (Altbach, 1999: 108).

Internationalisation of disciplinary development, academic recruitment, student enrolment and exchange now becomes an important part of university work to bring national system into the world, where national competitiveness can be enhanced and evaluated according to the international standards. Different systems cope with a similar situation in different ways. The US public research universities, highly decentralized and historically entrepreneurial-rooted (Clark, 1995; Geiger, 1986), have focused on “maintaining and expanding revenues, especially those critical to the organizations” (Slaughter & Leslie, 1997: 15). As a result of the strategic shift from basic research to applied research, faculties which are closer to the market capture more revenue shares than others. However, the institutions have their own strategies to balance in the policy turbulence, which is crucial to maintain academic prominence for the American research universities (Clark, 1995). Conditions in Britain are similar to the America, at a faster speed of change. Finding itself lagged behind in efficiency and effectiveness, the British government has been bold to reduce spending per student, to stimulate market or market-like activities in universities, and to build traditionally teaching-oriented universities into the centres of research production (Ibid). Compared to the US and Britain, the pace of change in Norway is steady but slower. The government continuously issues relevant papers to declare national R & D strategies, and without hesitation to embrace the idea of a service university system, in spite of its well-performing economy.

3.3 The reform and its motif

Carnoy (1999) precisely categorizes the worldwide educational reforms into three groups. Firstly, the reforms, aiming to achieve educational outcome for national development and to build universities more competitive for brain/financial resources, are called “competitiveness-driven reform”. The universities are given more
autonomy in decision-making. The standards of academic achievement are set rigidly in hopes to raise the stakeholders' expectations so as to improve the quality. Competitiveness requires better management of educational resources. The system of teachers’ training and recruitment needs to be improved as well. All in all, competitiveness-building asks for money input, contradictory to the financial concerns which decrease the overall public spending on university.

Secondly, the reforms that cut public resources in financing university research and give way to the private providers are called “finance-driven reforms”. An important precondition of this type is the state’s incapability to raise sufficient public revenue to meet the needs of university expansion. Many governments find it necessary to transform public research universities from the state-sponsored to the state-assisted. Even in countries not confronting state revenue crisis, say Norway, the government still believes that the universities should be less dependent on the government funding. The countries in a process of transformation from a centralized economy to a capitalist system are more willing to shrink the public spending in universities to become more competitive and efficient (Altbach, 1999). This reform shifts public funding from higher level of education to a lower level, tremendously cutting the university revenue. The private sector comes in to fulfil the gap between a decreasing public funding and a sustaining research cost. In addition, massification rightly reduces the cost per student, allowing for “high-yield, low-cost” to meet the demand for higher productivity.

The third type of the reform, opening access for university education, offering more choices to meet different needs, and enhancing the political role of higher education as a source of social mobility and social equalization, is called “equity-driven reforms”. It more or less conflicts the goals of competitiveness and financial concerns for several reasons. Firstly, emphasis on competitiveness requires mass possession of high level skills; however, equity is addressed in the interest of more disadvantaged groups and targets mainly at the basic skills; Secondly, facing the global competition for efficiency and effectiveness, the national university reforms are
often driven by financial concerns, which “tend to increase inequity in the delivery of educational services” (Carnoy, 1999: 46). On the other hand, mass higher education, unsurprisingly, through ICT, enhances equity by conveying university education to a larger population.

Looking at three countries through Carnoy’s lens, I distinguish that financial concerns have been the reform catalyst in the US and Britain since 1970s. Entering the Informational Age, all states care more about their national competitiveness, which is built upon S & T development. Thus, countries like Norway, in spite of its well-performed national economy, are energetically taking reforms.

3.4 Summary

This chapter conducts a case study of three western countries to reveal a similar trend. The informational society asks for a more productive R & D working system within the universities. The US, Britain and Norway, though having different national governance system, academic tradition, research funding structure, have used political tools to make their university research more accountable, more beneficial to the economic development, to encourage the faculties to look for funding themselves, and to prioritize S & T and the applied research in the state resource allocation. Given Carnoy’s categorization of fiscal situation, national competitiveness and social equity, I see what the governments’ major concerns are. In the next chapter, I shall elaborate on the different strategies by analyzing different national factors.
Chapter 4 An articulation of the reform strategies

In Chapter Two, I have analyzed a new pattern of knowledge production. The universities, as knowledge producers, are becoming more important in this informational economy. The idea of a service university is a response to a decreasing public funding and an increasing demand of knowledge relevance. Chapter Three has conducted a brief case study, showing that different nations have similar imperatives to reform their research universities, though the reforms vary in scope, pace and structure. In this chapter, I intend to reveal that different reform strategies depend on different national conditions, including the state’s financial situation, what the states prioritize in their overall development plan, and how the states interpret the role of a public sector (Boer et al, 2002; Carnoy, 1999; Cummings, 1998; Ginsburg, 1991; Slaughter & Leslie, 1997).

4.1 The financial conditions of research universities

4.1.1 The mechanism.

A lot of things go back to “money” in the sense that the research universities are asked to perform equally well, or even better, with less money per capital (Johnson, 2002). A financial stringency often urges the universities to adjust their earning and spending structure.

In the 1970s, oil crisis hit the western society, particularly the US, marking a full stop for the post-war economic prosperity. Keynesianism¹, which had dominated the mainstream economic study since the 1930s, ended up with roaring inflation rate and economic stagnation. The state’s heavy-handed policies distorted demand and supply information in the market, making immediate remedy impossible. This is the intrinsic

¹ Keynesianism is an economic theory based on the ideas of 20th century British economist John Maynard Keynes. It promotes a mixed economy, where both the state and the private sector play an important role, in contrast to laissez-faire economics (economic theory based on the belief that markets and the private sector could operate well on their own, without state intervention). Sources: http://en.wikipedia.org/wiki/Keynesian_economics
weakness of the government-interventionism economics. People started to question the state's capacity and, more seriously, the legitimacy. A mass-production and mass-consumption was no longer an effective diagnosis, since the inflation rate was still roaring. The policy makers in the US need to find another way. They turned to the information technology industry to increase the productivity, to produce high value-added goods, and to compete globally for the best brains. This brought the US back to the economic prosperity and continuous development.

When in the crisis, the states always try to legitimize their rule. But the resources they can mobilize are limited. Thus the states always demand more rationalized working process, eager to show their responsibility for the whole system. The states will also give more space for the private sector, since they are unable to centralize everything to realize the public good (Witty & Power, 1999). Since then, the universities in the US and other western countries started to realize that a large portion of their state subsidy were cut down, forcing them to seek alternative ways to survive the harsh time. The public universities undertook downsizing, while the private universities were more active in fund-raising and marketing (Shumar, 1997). Shumar (Ibid: 84) gave a strong notion that the business sector of the universities had become the business of universities themselves.

Taking care of the universities for public values and public goods has increasingly been substituted by a new pattern of cooperation among the universities, the government, and other stakeholders. A dramatic change is a growing role of the business and industry within the campus, and a shift from the science-based research towards a research economy, accurately captured in Academic capitalism, an influential book by Slaughter and Leslie (1997: 8):

To maintain or to expand resources, faculty had to compete increasingly for external dollars that were tied to market-related research, which was referred to variously as applied, commercial, strategic, and targeted research, whether these moneys were in the form of research grants and contracts, service contracts, partnerships with industry and government, technology transfer, or the recruitment of more and higher fee-paying students. We call institutional and professorial market or market-like efforts to secure external moneys academic capitalism.
The US government started to transfer the ownership of the federally-funded research patents from the government to the individual universities, encouraging the economic use of these patents. The long-term pure research projects under academic control are shifted to a university-industry partnership, where the contract decides the research orientation and evaluates the research by potential economic value (Slaughter & Rhoades, 2004). The crisis-management mentality redefines the government’s role, privatization, commercialization, deregulation and re-regulation, and promotes the American new economy globally. Since this new economy was so attractive and the US universities are so prominent, this mechanism becomes a stereotype for other countries.

Crossing the continents, the substitution between the public and private support is becoming more obvious. In Brazil, the state fiscal crisis has been a continuing condition which brings about the rise of alternative institutions—the private tuition-based higher education (Slaughter & Rhoades, 2004: 13). Across the South-east Asia, the economic crisis in the 1990s led to many policy adjustments based on the negotiation between the government and various agencies. Varghese (2001) observed that the most important adjustments included reallocating the state budgets—from the infrastructure building to those more immediate needs. Thailand and Philippines cut budget sharply. Malaysia, Indonesia and Korea restored the public spending level shortly after the crisis. However, the money went directly to students rather than to the universities. Even in Nordic welfare states where the state financial condition is performing well, this substitution and integration between the government, universities and the private sectors is still speeding up.

Nevertheless, the pace of this process differs. Cummings (1998) argued that a rapid pace is usually found in a country transiting from a centralized regime to a more decentralized economy, particularly in those developing countries with political crisis, such as Russia. Carnoy and Samoff (1990)’s study about the conditional capitalistic states echoes this point. In these systems, the non-capitalist elements in the political system exaggerate the influence of metropolitan capitalistic dynamism in national
development process (p.20-22). As in Norway, the direction towards market competency and integration of the public and private sector is clear enough, but the pace is much slower, due to its well-performing national economy (Tjeldvoll, February 2006, personal correspondence).

4.1.2 The consequences

The governments are trying to make the universities more independent from the public funding, and more integrated into the cooperation with other stakeholders. What might be the consequences of this shift in policies?

Trowler (2002) conducts intensive interviews with department heads in several British universities, finding out that most of the interviewees have experienced reduced public funding since Margaret Thatcher’s administration. They have seen sustaining the academic and administrative work as the definition for survival, and their surviving strategy is to seek for the non-public resources. Their daily work is either to make a bigger cake or to slice the cake more efficiently. Neither is easy for them.

Bleiklie (2000) made a comparative study of policy changes in the universities in England, Norway and Sweden. He found that the reform in England was centralized, top-down in nature. This broke up the tradition of consensus-seeking among multiple stakeholders in the policy process and, more often than not, skipped the consultation process. Norway has taken a much less radical pace, and retained coherence in the policy community, meaning that civil servants and academics personally know each other and share a common background. Sweden has emulated England, from a community model to a new-managerial mode. Radical or not, the direction of these reforms goes clearly towards the Anglo-Saxon market mode.

It is hard to predict at this moment whether these changes will cause detrimental effect to the research universities’ core value as to advance the knowledge and to pursue the truth. A practical response is not to single-mindedly sell the institutions, since academic prestige is still foremost important to the research universities
The universities are both profit maximisers and prestige maximisers. Many people assume that the industry and the research university naturally have distinct interest that cannot achieve mutual benefit, while some others argue that the industry, just like the academia, also asks for excellence and capable researchers. Thus, stick to excellence, the university will not make it wrong.

As to the impact of the research funding on economy, there is little concrete empirical data on how much the states invest on which field generates how much of the GDP growth. Moreover, the difference between the applied and basic research is gradually getting blurred. The most basic research can turn out to be economically productive while the result of some applied research may not applicable at all. In addition, investing in research has spill-over and cross-disciplinary effect, as is revealed in BankBoston report (March 1997).

4.2 The states’ concerns

The financial condition is more or less objective. Subjectively what concerns the states, when they plan to reform their research universities? The first issue is legitimacy, both the legitimacy of the state authority and the legitimacy of knowledge production.

A fiscal crisis often leads to a legitimacy crisis of the states, resulting in institutional restructure. The contemporary social theories have richly dealt with the legitimacy crisis. Jürgen Habermas (1975) pointed out that the state could not simply take over the cultural system. The expansion of the state steering and planning actually resulted in many problematic issues which were once within the domain of cultural and traditional spheres. He went on arguing that people had a demand for the “meaning” or “value” which was a kind of scarce resource. Once the scarcity could not be fulfilled, the legitimacy would be questioned, and then would meet with crisis. Thus a legitimation crisis is always based on a motivation crisis—that is, a discrepancy between the need for motives declared by the state, the educational
system and the occupational system on the one hand, and the motivation supplied by the socio-cultural system on the other. To make it simpler: once the state regime can convince the citizens that it deserves the ruling authority it is having now, no legitimation crisis in political sense. Many problems can be detrimental to the state legitimacy, for instance, the political incapability, economic weakness, a collapse in the tradition, or the production of unconvincing knowledge/information. To regain the legitimacy has two alternatives: either to overthrow the old authority structure by means of a radical revolution, as the American civil war, or to modify the value and content indoctrinated to the people in order to strengthen the social fabric.

Weiler (2004) raises the concept of “reciprocal legitimation”, meaning that the knowledge legitimizes the power and mutually the knowledge is legitimized by the power. Not only does the power demand legitimacy, but the knowledge needs legitimacy as well. The knowledge asks for credibility and recognition, which includes the understanding of what is knowledge, how should it be produced and transferred. These understandings are subject to many external factors apart from the content of knowledge itself. Weiler is very optimistic in the fact that the reciprocity between the power and the knowledge does exist: the state needs the universities to be “currency of choice” in the social transformation; at the same time, the knowledge also derives much of its legitimacy from the state’s apparatus, for instance, what is to be taught, which discipline should be given priority over others, what kind of research should be funded by the government and what shouldn’t. Those issues greatly influence the research universities.

The second concern is the economic development.

Kerr (1963) points out the uses of research universities as contributions to the new discoveries and highly-skilled labour forces, particularly in such areas as usable energy, new materials, biotechnology, and electronic technology. Bok (1990) also offers reflections on that the advanced nations depend increasingly on the three critical elements: new discoveries, highly trained personnel and expert knowledge. The research universities are primarily responsible for the first two elements, and a
major source of the third. He argues that this is why the university become a central institution in the post-industrial society. People believe that the S & T innovation is crucial in accelerating national development and increasing the overall competency. Correspondingly, since the research university is a significant technology incubator, it tremendously fuels the economic development (Carnoy, 1999b; Carnoy, Castell, Cohen & Cordoso, 1993; Castell, 2000a, 2000c; Nelson, 1993).

Given limited resources, the states’ priority in R & D is crucial to the final outcome. Facing the financial stringency, the state tends to cut the unnecessary spending on some “less productive” fields. Though BostonBank report on MIT proves it short-sighted to label some research as important and others as unimportant, many universities, particularly those less prestigious, are involved in more fierce resource competition in which those “economically potential” subjects are much easier to get money. The US, after the World War II, has emphasized advancing science as “an endless frontier”. The Norwegian government prioritizes those fields which make Norway more competitive in global resource competition. The British research councils also explicitly refer to S & T research as their main funding objects, as shown in Chapter Three.

In the newly industrialized countries (NICs) and less developed regions, S & T helps the government to win credits—political stability and economic competency. In Hayhoe’s (1996) analysis on Japan, Taiwan and South Korea about their historical transition from a hierarchical centralized society to the pluralism, she identifies the university expansion as an important element during this process, strongly emphasizing enrolment in science and engineering. Carnoy (1999b) and Castells (1994) also theorize the secret of Asian Tigers’ successes—the high growth rates and rapid industrialization of Hong Kong, Taiwan, Singapore and South Korea between 1960s and 1990s. They argue that their economic development can be attributed to the endogenous technological development, which generates and accommodate hi-technology, and to a supporting system of the research institution, which continuously cultivates quality labour.
I can safely conclude that in this global innovation economy, the developed and developing countries both rely on producing and transferring up-dated technology as their competing rents and bargain power. The states expect the universities to foster skilful and professional human resources which can serve both the long-term and short-term needs (Carnoy, 1999b) and can legitimize the authority of the ruling class/party. The state has special interest in prospering some researches that are “historically tied to inherent national objectives” (Ibid: 75). Based on this point, it is not difficult to understand that the states’ intervention into university research has their practical concern behind. But how states interpret the public role and how they set boundary for their intervention (or regulation)? It also varies among the countries.

4.3 The role of the state

The states do exert control over their research universities, though in some countries this control is tighter, while others more loose. Tjeldvoll (2003) distinguished three different traditions of the states’ control over universities’ administrative and academic affairs through fiscal funding.

One is the Anglo-Saxon tradition: the state gives much freedom to both academic work and administration. The institutions are not dependent on the government for funding. They have great autonomy in personnel recruitment and student enrolment. They function to the interests of the society. The US is a typical case where the universities are free from ideological control as well as being supported by different stakeholders. Academic freedom has long been recognized, but to some extent it gives way to the “professional collective and utilitarian considerations of the state and industry” (Ibid: 3). Since the World War II, the public research universities in the US started to experience more government control at all bureaucratic levels (Clark, 1995: 206). The states, though rhetorically claiming to be committed to the higher education for all, do not treat HEIs equal in terms of funding. They have discriminating funding policies varying among disciplines. The British universities have also experienced accelerated evolution from a high level independent system to a heavy-handed state steering. Once, the education policy makers and chancellors were in a small commune,
having cosy relationship. Since late 1960s, when the nasty and abrupt drift towards a state control occurred, this cosy community forever disappeared. This drift “fought against long-standing faculty traditions of autonomy by a government deeply suspicious of academics and committed to rapid movement toward a system that will be leaner in research, lower in cost per student, and more responsive to industrial and government interests” (Clark, 1995: 205).

The second tradition is the continental European model. Norway, though moving towards the America functionalist model, falls into this category. This model is still persisting today but has undertaken tremendous changes (Clark, 1995). In this model, there is a strong but limited state, whose origin can be traced back to the Humboldtian ideal of free academic researchers and administrative intervention. “The state takes decisive responsibility for securing the autonomy of the university and independent researchers, while it at the same time considers the university as a part of the official state administration” (Tjeldvoll, 2003: 4). Nordic countries, though moving slowly, are going steadily towards a stronger state, willing to support a market metaphor, building universities more competitive, accountable, and efficient (Kivinen, 1999).

The third tradition, as Tjeldvoll argues, is often the case in the communist or socialist-oriented countries in the developing world. The state has tight control in both administrative work and academic part. Research and teaching is highly controlled to be in ally with the state’s interests, usually the interests of ruling party. Recently, a new management theory—management by objectives, activity planning and evaluation—has been fairly influential in these countries (Tjeldvoll, 2003). It redefines the objectives and value of the university research. These states believe that their legitimacy first of all requires economic accomplishments, and the success in dealing with economy can count on the success in running a handful of research universities. If functioning well, the research universities can become catalyst to a societal and economic transition and a panacea to other problems as well.

In all the three traditions, the market force is getting more significant, since most governments firmly believe that the research universities should at least do some
researches relevant to market needs. Multinational technological giants also have more power in campus. They, holding enormous fortune and opportunity, have built a science-technology-economy network, which every nation is willing to be integrated into, rather than being marginalized from. Above all, being a member of this global market is beneficial to any country.

The triple helix of university-state-market alters the state’s role from the dominating regulation to a distant steering, Neave referring to this change as from a “bureaucratic state” to a “evaluative state” (Neave, cited in Witty & Power, 1999: 109). The neo-liberal states try to maintain the central regulation, thus they change the strategy from product control (substantive autonomy) to process control (procedural autonomy) (Neave & Van Vught: 1994). Burton Clark’s triangle of university autonomy, the state power and oligarchy shares some similarity with this helix, nations being positioned differently along three scales, according to their political, economic, societal and academic tradition (Clark, 1983; Etzkowitz & Leydesdorff, 2005).

4.4 Summary

In the chapter, I offer some analysis on the concerns of the states when they reform the research universities.

Firstly, I raise the state’s financial situation. It partly explains the university reforms in many countries, including the US and Britain. The crisis mentality demands more efficiency and effectiveness under limited resources. The state universities gradually evolve from a state-financed system to a state-assisted system. A percentage of the university revenue relies on the diversified sources as a quick response to the fiscal stringency.

The financial crisis does not exist alone. It questions the states’ legitimacy. The states count on their research university to provide certain knowledge which can enhance the ruling power; meanwhile the universities get recognition from the ruler that their production is valuable and legitimate. This is called reciprocal legitimation.
When the state legitimacy is in crisis, the ruling power naturally relies on the research universities to convince the ruled with its academic authority on one hand, and to fuel the economy with more knowledge production on the other.

The states’ power over the research universities is evident. However, the way they impose power has been changing over time. Using Clark (1995), Kivinen (1999), and Tjeldvoll (2003), I categorize the US, Britain and Norway, as the developed countries, and China, a developing giant, into different traditions. The similarity among these countries is that the state power, integrated with the global/domestic market force, is becoming milder. The international organizations are sharing power with the government. The state has to deal a multifaceted relationship with more stakeholders. Even so, how much power the state still has, and how the power is exerted and shared is still so different. I shall turn to the Chinese case in the next chapter, expecting to draw boundary between the transitional and the non-transitional states.
Chapter 5 China—A reform in practice

Given a global context of the university reforms, the previous chapters have answered two of the five sub-questions in Chapter One. The first is what have been the changes in the state funding policy towards the research universities in several western cases? The answer is that the governments have become more thrifty in funding, asking for more accountability and economic benefits. They encourage the academia to work with the entrepreneurs. The second is what concerns the states when they initiate these reforms? One is the budget stringency, always bringing about a legitimacy crisis. Another is the national competency. In addition, the role of the state and the political tradition of this country also count for the magnitude of the reform. In this chapter, I shall turn to the Chinese research university reform in the 1990s, trying to answer the other sub-questions:

1: How has the Chinese state changed its resource allocation structure in the 1990s research university reform?

2: What has been the impact of these policy changes in the research universities?

By revealing the highlights of this reform, I offer illustrations on the approaches which have been taken by the Chinese government, similar or different to the three western cases. The China’s university system has gone through a long history of evolution, being influenced by many foreign powers. I shall briefly go through the characteristics of the pre-reform system. For more detailed accounts, the readers may refer to the Appendix—the Old Legacy of Chinese universities: 1911-1989.

Actually, the university reform has been initiated since late 1970s, when the Cultural Revolution ended dramatically. But the fundamentals of the systems remained unchanged, being the main obstacles to achieve further improvement. Li Lanqing (2004, 66-99) points out that the major problem at that time was the central planning pattern: the multi-layer administration brings about unnecessary tight control over everything; excessive duplication in the programs and research projects across
the regions; lack of communication between teaching, research and production. Entering 1990s, China needs to adapt herself to an informational society which values knowledge more than ever before. Instrumentally, the Chinese research universities are pushed to the forefront of this reform.

### 5.1 A chronological sketch of the 1990s reform

Year 1993, the central authority issued the *Outline for China’s Education Reform and Development*. The next year, in the Second National Conference on Education, the *Implementation Proposal for the Outline* was formulated, setting the task of building key universities and key research fields.

May 1995, the National Conference on Science and Technology opened in Beijing. The gateway for China’s national rejuvenation was announced: science and education. In the same year, the state launched the *General Plan for the Construction of Project 211*, aiming to bring 100 universities and many key disciplines to a world top level. This year also witnessed increasing collaborations between the central and the local governments in running universities. The *Decision on Deepening Higher Education Administrative System Reform* welcomes diverse sources of funding.

1996, then-Chairman of CCP held a roundtable discussion with four key Chinese technology institutes, emphasizing that they must serve modernization in an encompassing manner. The same year, the Chinese Education Scientific Research Net (CERNET) was activated and connected with the German Academic Research Net (DEN), bringing China into a digital global academic network.

The Ministry of Education (MOE) substituted the State Educational Committee in 1998, becoming more powerful in policy making and implementation. Shortly after, CCP established the State Science, Technology and Education Action Group led by the state premier. In May, the then-Chairman addressed in Peking University that the Chinese universities must play a key role in rejuvenating our nation through education...
and innovation. The Changjiang Scholar Award Plan\(^1\) was established to cultivate intellectuals for the national development.

*The Action Plan for Educational Rejuvenation in 21\(^{st}\) Century* was launched in 1999, setting a goal that, up to year 2000, the overall quality of education, scientific research, administrative capacity and management efficiency would be significantly improved. Some research universities shall reach the world-top.

Entering the 21st century, the government have forged the university reform ahead in a full speed, determinately taking efforts to convert the S & T innovation into productivity. It encourages the university-run hi-tech ventures and builds university S & T parks. It welcomes non-public funding to support the universities, including the revenue from the university-industry collaboration and foreign investment. The humanity and social science research has also boomed since the MOE issued *the Decisions on Further Development of Philosophy and Social Science Research in Universities* in 2003. Research on educational theory, education policy and planning, education and development started to provide policy recommendations for the government (Chen, 2002)\(^2\).

It is evident that the Chinese government aims high in building an efficient and prominent university system, which can compete with other systems over resources. To achieve this goal, particularly out of an old system on the edge of collapse, the state feels imperatives to hurry up, finding some quick-fit solutions. Now let me go through some main strategies which the state believes will work.

### 5.2 Central to local, small to big

\(^1\) Changjiang literally means Yangtzi River, the longest river in China. The Changjiang Scholar Award Plan is actually a fund, which aims to build a competitive research team in universities. This plan was co-founded by the MOE, and the Hong Kong industrial and estate tycoon Li Jiacheng and his Changjiang Infrastructure Inc in 1998.

\(^2\) Chen Zhili was the Education Minister in China and she addressed in the closing ceremony of the National Education Research Project Evaluation Workshop, saying that the educational research need to deal with the hot topics emerging from latest education reform and to bring forth new ideas to assist further decision-making (Feb 2002).
Before the 1990s reform, about 570 universities were affiliated with the central education ministry. Only one bowl of rice, but too many hungry kids cried for meal (Li, 2004). The child who cried louder would be more likely to catch the attention and the rest were left starving. The government could not be a caring mother for all of them. Thus she decided to put most of them for local adoption. Their participation, government believed, could share the financial burden. The central government tried to convince the locality that these HEIs, if fed well, will benefit the local development tremendously. This motivated the local governments to collaborate. The government also tried to save resources by eliminating reduplicated institutions, faculties and departments, and by integrating small polytechnics into larger comprehensive universities.

Encouraged by the policy change, many universities became fanatic about being as comprehensive as possible. They worshipped the credo that “the bigger, the stronger”. They believe that the more disciplines they have, the more distinguished they are. This belief brought about a large-scale structural reform. The pre-reform era saw the Chinese universities, under the Soviet legacy, usually small and limited in certain fields to meet special demands of the state (Harnett, 1998; Li, 2004). The 1990s reform tore this structure apart. Up to 2002, 556 HEIs have been adopted by the local governments. After merger, this number decreased to 232. 227 inter-university cooperation projects have been initiated in 317 institutions. Furthermore, 708 HEIs have been merged into 302 comprehensive universities. In 2003, the HEIs directly affiliated with central ministries were reduced to 117, 72 of which under the MOE. Localities run 1154 institutions. (Li, 2004)

Up to May 26, 2005, 424 university merger cases have occurred (MOE, May 26, 2005). Many colleges turn into comprehensive universities overnight. So far, it is still hard to conclude any causality between the merger and the research competency. Two reports in 2004, the “university S & T innovation competency evaluation” and the “university humanity and social science research capacity evaluation”, give rankings of HEIs’ research competency, respectively in scientific disciplines and liberal arts,
showing that 15 out of the top 20 universities are comprehensive research universities which have gone through mergers. At the same time, many lagged-behind universities are also new-borns of the merger cases.

5.3 Only feed the big ones

I have mentioned earlier that the central government choose to feed 100 universities and put the majority for local adoption. It specifies those lucky ones in the Project 211 and Project 985. They get generous financial support in teachers’ salary, infrastructure building and research, particularly those institutions chosen as the first-stage pilot experimental study. To implement the Project 211, 15 universities were put into the Ninth Five-Year Plan (1996 – 2000). 11 of them are polytechnics, and the rest 4 are comprehensive universities with particular strengths in natural science and engineering studies. The universities featuring humanity and social sciences, such as Beijing Normal University (BNU) and RUC were quietly eliminated. Four years later, the state selected 9 out of these 15 HEIs as the first-stage implementation of the Project 985. Though BNU and RUC were not part of the team at the beginning, due to increasing importance the state addressed for philosophy and social science studies, they also went back into the ally in a few years as a follow-up project.

3 The Project 211 was launched in 1995, aiming to build 100 key HEIs within several decades. The Project 985 was launched in 1999, selecting several universities from the Project 211 to create a league of world-class universities to rival the best in the world.

4 The Five-Year Plan was a national social-economic development plan in China. It started in 1955 and was reformulated once every five years. Year 1996 to 2000 was the Ninth Five-Year Plan period.

5 These 11 polytechnics are Tsinghua University, Beijing Institute of Technology, Beijing University of Aeronautics and Astronautics, China Agriculture University, Tianjin University, Ha’erbin Institute of Technology, Shanghai Jiaotong University, University of Science and Technology of China, Zhejiang University, Xi’an Jiaotong University, North-western Institute of Technology; the 4 comprehensive universities are Peking University, Nankai University, Fudan University, and Nanjing University.

6 BNU is a distinguished comprehensive university for teachers’ training.

7 These nine institutions are Peking University, Tsinghua University, Fudan University, Nanjing University, Zhejiang University, Ha’erbin Institute of Technology, Shanghai Jiaotong University, University of Science and Technology of China, Xi’an Jiaotong University.
The Chinese education system has a tradition of emphasizing science while despising humanities and liberal arts. Pupils are often taught that “learning maths, physics and chemistry well, you do not have to worry wherever you go”. Those students who can manage science are smart; similarly, those universities who have good scientific research are respected. In 1993, when the Chinese Academy of Management Science started to publish a university ranking in scientific research, the evaluation of humanity and social sciences research were seen as complementary criteria. July 2004, for the first time, this ranking has divided its data sources into two series—the Scientific and Technological Innovation Competitiveness and the Human Studies Research Competitiveness. Each university was evaluated independently according to their own strengths in various fields. It quantifies the data and specifies the input and output, which provides information for the follow-up funding.

It is clear that the government has been trying to balance funding among different disciplines, resources still accumulate in some leading-edge high technology areas (Hayhoe & Zhong, 1995: 128), including those closely related with defence and national security, such as space technology, those crucial for hi-tech competition, such as bioengineering, information technology, material science, ecological agriculture, and those important in the global trade, for instance economics, finance, and management (MOE, 2000, 2001, 2002, 2004)\(^8\).

The Chinese Science and Technology Statistics Bureau’s (CSTS, 2005) report provides relevant statistics: the R & D personnel in 2004 amounts to 2,080 thousands, rising 16.9% from the previous year. R & D funding amounts to 14.77 billion yuan\(^9\), increased by 21.1%. Figure 5.1 and 5.2 shows the data of personnel and funding in

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\(^8\) This part of information is retrieved from the MOE web site of its annual Key Memorandum, respectively in year 2000, 2001, 2002 and 2004, which explicitly prioritizes these three categories of subjects in public funding and other support.

Year 2000: [http://www.moe.edu.cn/edoas/website18/info4949.htm](http://www.moe.edu.cn/edoas/website18/info4949.htm)

Year 2001: [http://www.moe.edu.cn/edoas/website18/info4947.htm](http://www.moe.edu.cn/edoas/website18/info4947.htm)

Year 2002: [http://www.moe.edu.cn/edoas/website18/info3652.htm](http://www.moe.edu.cn/edoas/website18/info3652.htm)

Year 2004: [http://www.moe.edu.cn/edoas/website18/info3654.htm](http://www.moe.edu.cn/edoas/website18/info3654.htm)

\(^9\) Yuan is Chinese local currency. The convert ration between USD and Yuan is approximately 1: 8.2.
five major research fields.

![R & D funding by discipline in HEIs](image)

Figure 5.1 R & D funding by disciplines in HEIs. Sources: Chinese Science and Technology Statistics Bureau (CSTS): [http://www.sts.org.cn/tjbg/other/documents/2005/051231.htm](http://www.sts.org.cn/tjbg/other/documents/2005/051231.htm)

The funding in engineering technology research enormously exceeds other disciplines. In each category, the funding has increased; however, the engineering research has the biggest increment. The rate of increase does not vary significantly among disciplines. The social science and humanity research gets the smallest part.

Referring to figure 5.2, the reader can see the number of researchers working in each field. The engineering and technology study is the most densely populated, proportionate to its amount of funding. The social science and humanity research get the least portion of money, but feed the third largest group of staff.
CSTS (2005) report gives further analysis into the subfields of each category, finding that R & D funding is not averagely distributed among different subjects. In 2004, the sum of funding in 18 subjects\(^{10}\) accounts for 77.8\% of the overall, up to 300 million yuan annually.

The Chinese government has a simple strategy similar to the laws in the animal world: the biggest are the fittest, and the fittest survive. When the government faces the imperatives to save resources and to be efficient, she selects the elder and stronger siblings from her offspring, leaving the rest to the jungle. Let us take a look at those who have been chosen. From 1993 to 2002, ten years’ Key Memorandum of the MOE mentioned humanity and social science research once, in 1996, but science and

\(^{10}\) Sorted ascendingly according to funding amount (unit: 100 million yuan annually), they are electronics, communication and cybernetics (15.46), computer science (11.47), material science (10.52), mechanical engineering (10.24), power and electrical engineering (6.40), civil engineering (6.18), biology (5.94), chemistry (5.18), chemical engineering (4.91), clinical medicine (4.81), agricultural science (4.76), aeronautics and astronautics (4.72), earth science (4.68), traffic and transportation engineering (4.54), management (4.52), physics (4.12), informatics and system (3.12), mining engineering (3.08).
technology more than 30 times\textsuperscript{11}. The difference in frequency speaks for itself. The government hopes to see the result of funding, and they set criteria before giving out money. However, the value of humanity and social science research is always harder to predict in a short period of time. This fact makes these subjects underinvested and their funding system bureaucratic and corrupted (Gu, 2002, Zheng, 2003). Despite of this neglect, the Marxism studies, theory of the Communism, and the party history have got stable funding. Besides, the science of management, economics, and finance, regarded as supportive to the economy and non-threatening to the state regime, get relatively generous support as well. The logic here is simple: talking about cost and profit is economically more beneficial than talking about for instance Chinese literature.

In contrast, the research in S & T, just like the U.S, Britain, and Norway, has been the darling of state support in recent decades. Compared with the humanity and social sciences, S & T research needs laboratory and equipment which can be extremely pricy. Equipped with up-dated machines, it is easier to keep the pace with the latest technological development in the world. Importantly, a better infrastructure and hardware can also attract foreign expertise and to retain domestic brains. The government understands the international cooperation as a strategic outsourcing, meaning more than blind copy (Li, 2004). Since 1949, when the People’s Republic of China got established, returned scholars and foreign experts have made substantial contributions to the S & T development\textsuperscript{12}. Now the state expects to build a platform where the world-class scientists can collaborate and make new breakthroughs. A

\textsuperscript{11} Refer to the MOE Web site for the Five-year Education plan from 1993 to 2002: http://www.moe.edu.cn/edoas/website18

\textsuperscript{12} Hayhoe & Zhong (1995) mention that the first generation which contributed directly to the making of nuclear weapon were prominent physicists and chemists returning from US, represented by Qian Xuesen. The second generation were trained in the Soviet, who played a crucial role in the Chinese industrialization. The third generation, for the time being, are still in the building. They, again, have been educated in the western higher education system. They are bringing back the western assumption about science into the domestic understanding of scholarship. Their citation and publication records are resoundingly prominent among their Chinese academic colleagues, but whether their western academic consciousness can be nicely grafted onto the traditional Chinese context remains controversial (Hayhoe, 1996).
survey conducted by the Economist (Sep, 2005) reveals that the China’s prominent universities have stocked up with foreign PhDs. For instance, in some departments of Peking University, a third of the faculty members have doctorates from the US. Funding also helps the universities to build their own research teams. The National Tenth Five-year Education Plan issued in 2002 (MOE, June, 2002) emphasizes the importance of cultivating domestic intellectuals. In 2004, the MOE initiated the Plan for Cultivating High Level Innovative Talents, based on the deepening of the Changjiang Scholar Award Plan and HEIs Innovation Plan, focusing on a young generation of scientists, including the graduate students.

5.4 Diverse funding, more stakeholders

Speculated from Cleverly (1991), Hayhoe (1989, 1996), Hayhoe & Zhong (1995), and Li (2004)’s viewpoints, I identify two sources of research funding in universities: governmental and non-governmental. The governmental funding comes from the MOE, the Ministry of Science and Technology, other state ministries, and other state funding bodies such as the State Social Science Fund Committee and the State Natural Science Fund Committee. In addition, the provincial and lower level governments, and other local public project funds also provide funding support. The non-governmental funding includes funding from domestic and transnational enterprises, domestic private project fund, funding from the international organizations e.g., the European Union and the United Nation, and collaborative funding from overseas universities or research academies. For the basic research and quite a few humanity and social science research, the government funding has been a major part; for the applied research (including engineering, hi-tech, economic, management), a significant amount comes from the non-public sector. Recently, both types have increased in amount. But the percentage does not change significantly, as shown in Figure 5.3.

From figure 5.3, one can see that the state funding and the enterprise funding comprise the majority of the university R & D activities. The CSTS report also reveals that this funding structure has sustained for years and will continue in the
foreseeable future. Recently, the overseas project funding has been increasing, annually about 5 to 7 percent. But compared with a remarkable 24% increase in the state funding and an even higher rate in enterprise funding, the overseas project funding is still in a subordinate position (CSTS, 2005).

**Sources of research funding for higher education institutions in China (2004)**

- Overseas funding: 1%
- Enterprise funded project: 37%
- Other sources: 7%
- Government (Local and central): 55%

Figure 5.3 *Sources of research funding for higher education institutions in China.*


This structure, if compared with Britain in figure 3.3 and US in figure 3.1, is less diversified. The Chinese research universities have very little income from the endowment, internal investment, and tuition fees. Not like US or Britain, the Chinese system is still heavily dependent on external financial support, public or private. The government has made adjustment in this old structure through integration of production, learning and research (chan xue yan yitihua). Before, the research universities usually waited for projects, for funding, for dissemination of their research results, and for evaluation. Li (2004) criticized this stereotype as the legacy of planning economy. The state’s strategy is to encourage the HEIs to raise fund from all possible sources including alumni donation, tuition fees, and the university start-up company, in addition to the substantial financial support they can get from the
government (MOE, August 8, 2005).

The Chinese government has always been cautious of charging tuition fees, since people condemn it as commercialization of education (Li, 2004). In 2002, the legislation approved that the private higher education institutions were allowed to earn an “appropriate” profit (Altbach, 2004: 25). The prestigious universities can establish affiliated colleges which may charge higher fees and enrol less capable students. Under this permission, tuition fee becomes an increasingly significant supplement of the research universities’ finance. The Economist survey (2005) reveals that the tuitions charged in 2005 made up 26% of the total earnings of the public universities, nearly twice as much as the percentage in 1998. Furthermore, it is still increasing.

The state issued the Decisions on Stepping up Technological Innovation and Developing and Industrializing High Technology in 1999, which promoted the trial establishment of 15 national university S & T parks. This is a joint program between the Ministry of Science and Technology and the MOE. In 2001, 23 more were set up, and 21 were added in 2002. By then, 44 S & T parks were affiliated with 104 universities and attracted a gross investment of 27.9 billion yuan (Li, 2004: 204-207).

The Chinese education leaders like to teach universities how to swim in the economic sea. Cooperation with technological giants such as IBM, Microsoft, Intel, Bell, NEC are warmly welcome. These companies, holding their reputation and expertise, have joined hands with the local intellectual communities. Microsoft works with the Chinese government to set up an officially-accredited post-Doc centre for computer science and annually runs theme workshop and faculty summit. IBM China Research Laboratory was established in 1995, located in a software park in Beijing. IBM claims

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13 This part of information is retrieved from the official websites of these Multinational Hi-tech Companies.
For Microsoft, refer to [http://research.microsoft.com/ur/asia/](http://research.microsoft.com/ur/asia/) and relevant links within the page;
For Bell-lab, refer to [http://blrc.edu.cn/blrcweb/about.htm#blrc](http://blrc.edu.cn/blrcweb/about.htm#blrc)
to bring its up-dated S & T to nurture China’s own hi-tech talent through collaborating with a few leading universities. In 2003, Hewlett-Packard established its research lab in Beijing. Being close to the MOE, it aims to build a long-term relationship with China’s key universities and research communities. Social science and humanity studies, compared with engineering and technological subjects, are lacking in this type of funding support.

5.5 Who is empowered and who is de-powered?

Those who get more resources are usually more powerful. Then whether this funding structure reform has affected the power structure of the research universities?

If I make inter-university comparison, it is easy to find that the prestigious universities with generous state funding have become bigger and more powerful. The less prestigious ones may be left powerless and voiceless in decision-making. Especially in the merger cases, one side always has more bargain power over the other. One president has more rights to be in charge of a larger institution, but the other has to accept a “vice-” title. Still, many believe that “bigger is beautiful”. Ironically, since 1990, the world has witnessed an increasingly more important private sector in China’s social development and national rejuvenation. This political and cultural pluralism has occurred in the North America, the Continental Europe, and the South-east Asia, convincing people that the pluralism can produce social equity in terms of resources and opportunity (Hayhoe, 1996). This pluralism, though not comprehensively developed in the contemporary China, leads China away from a public-dominated centralized society. The massification in the higher education sector is a vivid example.

Several decades ago, based on the case study of the North America, Japan and the Soviet Union, Bereday (1973) argued that this transition need not reduce the quality of education, and massification can stimulate the social needs, thus able to absorb the increasing number of graduates. This massification, supported by a belief of pluralism and equity, brought about the highest achievement in academics as well
as provided diverse services to meet different social needs. This is an ideal type of higher education development: diversity can be preserved with much of the lower-level university education provided by the private sector to meet the rising social demand for higher learning, while the state maintains control over some elite institutions.

But how far this pattern can fit into the Chinese social settings? Hayhoe (1996) analyzes the three East Asian societies in their own transitional periods—Japan in 1960s, Taiwan in 1970s and South Korea in 1980s. Some of her findings resonates the Chinese case: a technocratic point of view dominated the early stage of economic development, S & T got stronger support over other disciplines for many years, and the elite public institutions dominated standard setting and obtained substantial state support. In China, mass higher education necessarily depends on the contribution from the private sector, but Hayhoe (1996: 255) asked, “whether this funding will still find its way mainly into the public institutions, with an expansion of enrolments encouraged at all level, but most especially in the best institutions that head the system, or whether a mass private sector is encouraged to cater to those who either prefer this choice or do not qualify for higher standards of the public sector?” Yes, that is a major question. The scholars who argue, discuss, present, and write are mostly from research universities, public and prestigious. They do not express concerns over the lack of research resources simply because they do not have that problem. As a comprehensive prestigious university, the competition over funding is not a big deal. Even the humanity and social science research does not have a hard time, since there are two sets of criteria and each subject is evaluated based on its own criteria. More importantly, the prestigious universities always had advantage over the other institutions in resource allocation, no matter in humanities, social sciences or natural sciences.

Another important issue is the academic power, namely the professorial power. Do they lose part of power when more and more stakeholders participate in and ask for accountability? First, I shall clarify how much power the academic people have in
the pre-reform period.

![Diagram of Chinese University Power Structure]

Figure 5.4 *Power structure in Chinese Universities.* Graphic illustration of President Responsibility System under the Leadership of Party Committee in China’s Universities. Two folded arrows in the middle mean that 1) president is routinely one of the vice party secretaries; 2) dean of the faculty is also part of the faculty party committee.

It indicates in Figure 5.4 that the party and party members penetrate into all the units within the campus. Ideological control is very tight. The reform has empowered the university president through introducing a President Responsibility System. This system reduces the president’s academic responsibility and increases his/her administrative and political power (Zhou, 2005). In China, a university president has a mixed identity of academic authority, administrative authority and party authority. The president needs to have high academic accomplishment in at least one field; s/he is responsible for the general affairs of running an institution; furthermore, s/he is a representative of the party power. The President Responsibility System tries to alleviate the presidents’ academic working load and to introduce the entrepreneurial
management into the campus. But all in all, the president has to be under the rule of party committee. The political power of the academic and administrative group is limited.

During my writing, I have talked with more than 10 university researchers who have diverse background from law to economics, from computer science to statistics. I get the impression that the researchers do sometimes tailor their proposals to meet the needs of those who hold the power of purse. But they are cautious of using the concept of *academic capitalism* (xueshu zibenzhuyi). They held similar opinion that the accessibility and the amount of funding did push researchers to adjust their working plan from time to time. This push also has changed the nature of university research from the pure curiosity-driven to the utility-oriented mode in many possible ways. However, the magnitude of influence varies from person to person, from discipline to discipline. It is more significant in applied research fields, while the subjects such as the Chinese literature and astrophysics are relatively safe from market competition. Furthermore, the researchers’ personal interest and expertise still play an important role in decision-making and proposal formulation. Sometimes it is even the researchers’ expertise that determined the flowing of funding.

But not all the academic hold that positive attitude. The reform in Peking University (PKU) in 2003 has triggered hot debate on the legitimacy of university reform. Led by Zhang Weiying, a distinguished economist in PKU, this reform introduces a market mechanism to approach the world standard teaching and research. The main motif for the PKU reform, as mentioned by Prof. Zhang, is to compete with the world-top universities for brain and knowledge\(^\text{14}\). This reform proposal (first draft) opened the position of lecturers and associate professors to returned scholars or foreign academics, eliminated the inbreeding\(^\text{15}\) of academics, required 1/3 of the


\(^{15}\) *Academic inbreeding* refers to the phenomenon that undergraduates are enrolled into graduate study in the same department, then recruited in the same place after they complete their degree. The graduates from other institutions or backgrounds are easily excluded through biased enrolment and recruiting policy. *Inbreeding* is believed to complicate human relations and suffocate the diversity and
academic evaluation committee members to be foreign tenure professors, demanded
the newly appointed professor to master at least one foreign language. The poorly-run
(either economically or academically) department risked being eliminated. The
second draft, though eliminating many rigid quantitative criteria, still emphasizes the
role of competition. Debate over this reform focuses on two issues: the specific
tactics of reform including recruitment and promotion, and the general idea of
university education and research. Even the critics agree that the Chinese research
universities urgently need to enhance the quality of research and teaching. But
“quality” needs to be defined before any further discussion. If “quality” means the
“fitness of purpose”, then it comes to the point of what people expect from a
prestigious university like PKU. That is the core issue of the discussion.
Pro-reformers embrace the positive democratic elements of this plan, such as
professoriate committee and negotiated democracy; the opponents criticize the overall
design of putting the Chinese research universities under the prey of western ideology,
and of severely undermining the academic authority while enhancing the
administrative authority.

5.6 Summary

At the dawn of the 1990s university reform, the research universities in China
constituted an amalgam of different influences from a utilitarian American model, a
vertical-control Soviet model, a curiosity-driven German model, and a Chinese
tradition and culture. They have survived the continuous foreign invasions and

\[\text{motif for innovation.}\]


17 This part of information is referred to the following articles:
Mao, Yiming. Who can rescue PKU: Questioning Prof. Zhang, Weiying.
Xu, Jiling. Rationality of democracy in negotiation.
Yang, Dongping. PKU reform: reconstruction of university spirit.
domestic turbulence with great strength, and, for the time being, face urgent demand from the state, society and people that the universities should serve the needs of a societal and national development.

This chapter started with the highlights of the 1990s reform. A series of the policy documents and legislations were issued by the central authorities—the party organs, the State Committee, and the MOE—to set the outline and framework of this reform.

Specifically, this structural reform has reversed a Soviet pattern of isolated specialization and adopted an institutional amalgamation, combining social sciences, humanities, medical school, arts and music colleges, and polytechnics into a comprehensive giant university, expecting to enhance their inter-disciplinary collaboration and research capacity. The consequences of these structural adjustments remain unknown, but the special attention the state has given to a group of elite universities may result in a stratified and hierarchical order: those affiliated with the central government enjoy budget affluence and academic reputation; those run by the local governments have fewer resources and been left in disadvantages.

The state uses funding to support those universities in the Project 211 and 985, most of which feature in the leading hi-tech studies, in the fields related with the nation defence, and in those subjects crucial to the global competition. The humanity and social science research has for years been overlooked and underinvested until the moment when the state finds itself in need of enhancing regime legitimacy. The basic research, in political rhetoric, has not been left in disadvantage compared with the applied research. The state also puts funding in some areas to build a team of world-class scientists, either through domestic breeding or through international collaboration.

Apart from a dominant percentage of state funding, the government has taken efforts to diversify the sources of funding for the research universities, by using tuition fee, paid short-term courses, donations, particularly by integrating R & D with
industry and business sector. Funding, from all sources, has increased in absolute amount, without significant changes in proportion. The market force seems to be more acceptable and more prevalent now, though it is still subject to the necessity of the state rule. The multi-national technological giants are more actively involved in collaboration with the prestigious universities and the state/local educational authority, searching for profit and interests. It is evident that the state policy can have big impact on the non-public stakeholders.

In terms of the power structure, the university president has been given more power than before, administratively and politically. Since the president’s administrative power is defined to be under the party rule, the party power still overruns the administrative power and the academic power within the campus. Academics, though not severely overwhelmed by the financial stringency, face pressure from the political control, market ideology, and foreign influence. The university reform also brings about structural tensions in personnel recruiting system, promotion and retention. More profoundly, these tensions heat up discussions on the issue of quality and a healthy government-university-market relationship.

Whether there is anything peculiar to the Chinese university reform compared with other countries, say the US, Britain or Norway? What are the motifs of the Chinese state when it initiates this research university reform? I shall leave these question marks to the next chapter, discussion and conclusion.


Chapter 6 Discussion and conclusion

Confronting different challenges and finding the previous system dysfunctional, the governments initiate reforms in the hopes that the whole system will function again. As I have discussed in the preceding chapters, the world wide university reform starts in an era when the knowledge, information, S & T become all the more critical. The policy makers, academics, students, and other stakeholders, keep on shooting each other questions, “why do we need a research university and what do we want from an institution like that”. Opinions enormously differ, conditioned by different values people are holding. The reform has to take different opinions and values into consideration. Facing such diversity, it is hard to find a solution once-and-for-all.

From the preceding chapters, I can summarize the following points.

Firstly, in the US, Britain, Norway, as well as in China, there is a common demand to establish a stronger connection between the university research and the market. The main idea is to find a quick way that the knowledge can be converted into productivity, then into economic competitiveness. The production of S & T is particularly emphasized.

Secondly, the states like to make research universities more financially independent from the government funding. They are working on diversifying the funding sources. However, the support from the states is steadily strengthened, particularly in those realms considered as core national competency. The applied research, especially the hi-technology innovation, is most heavily funded. The state policy has tremendous impact on where and how much the public funding goes. The overseas funding and enterprises investment are also affected by the state policy.

Thirdly, how fast and how far the states push the reforms forward depends on their national factors. Thus the pace and scope of these reforms vary among countries. The US research universities, after a longer period of evolution, have been more thoroughly developed to absorb ups and downs of the federal funding policies and to
safeguard their independence in a complex mingle with a continuing provision of the private sources. When the federal support decreases, it does not make the university research stagnate; when it increases, it has not smothered the linkage between the research university and the American society (Geiger, 1986: 266-267). This shows a healthy model of entrepreneurial academy. The Britain, undergoing dramatic changes, embraces the American way. But the ancient tutorship, together with the newly-emerged collegiate system, makes it hard for the British government to change a strong tradition of high level academic independence. Norway, though moving slower than other countries, partly due to its good economic condition and social welfare system, is also steadily altering its funding policy to make the public research universities more accountable and financially autonomous. China shows her own consideration in funding university research: how to boost a capitalist economy and at the same time to maintain a strong central control. This is not an easy task, which makes its pace and scope oscillate.

I have argued that the states do concern about their financial situation when they give out funding. They wish to increase efficiency, to do more work with less money. They naturally would love to see the outcome of their funding, just as the businessman. But what distinguishes the state from other stakeholders is that the state has other concerns beyond the financial stringency. Chapter Three is devoted to three countries’ research university reform in terms of funding allocation. In Chapter Four, I make an assumption that, before initiating reforms, the states would take into consideration their financial situation, the state legitimacy, overall development, both long-term and short-term, and the role of the state in the traditional and contemporary contexts. In Chapter Five, I reveal the changes of the state policy, particularly the funding policy, in Chinese research universities, and the corresponding adjustment these changes have brought about in practicalities. In this chapter, I intend to answer one question: what are the main concerns of the Chinese state when it reforms the resource allocation structure? First of all, I shall take a look at the peculiarities of this Chinese reform.
6.1 China’s development gateway—technology rather than science

The China’s Annual Science Excellence Prize of 2005 was awarded in Beijing, mid-January, 2006. Year 2005 was recognized as a remarkable year that many Chinese scientists have made significant breakthroughs. The state set a goal that by 2010, China is going to be among the top 10 S & T competitive nations in the world. A steady increase of the public R & D spending shows the state’s commitment. This booming sci-technological China has its own characteristics in its development gateway.

Though science and technology are always put together, the Chinese state sees them as different. Li (2004) mentioned the Chinese government’s understandings of these differences:

“Science refers to theoretical intellectual systems which throw lights on the nature of things and their fundamental laws, whereas technology concerns the systematic knowledge needed to make a certain product, apply a certain process, or provide a certain service. …Science is discovery, the discovery of what is unknown in the world; technology is invention, the invention of what the world does not have. …technology derives from science and the application of science and scientific theories….Science has no national boundaries and is owned by all humanity; technology can be monopolistic and linked with direct economic interests.” (pp.193-194)

This understanding gives a clear token that relying on the technological progress is a driving force for economic growth. The 1990s has witnessed large scale of economic restructuring and the state-owned enterprises transformation in China. The Chinese government started to take bold steps towards a capitalist economy, though officially it is called the socialism with Chinese characteristics. The political barriers in the economic sphere and the innovation system have been gradually reduced to allow the universities to “swim in the economic sea”. The domestic and international markets have now been opened for each other. The exchange between money and ideas is possible. Those who can generate ideas and make innovations will win the market competition. This gives opportunities to those universities whose research can turn to an economic profit.

The natural science manifests itself as the truth, the understanding of the nature.
The humanity and social science is seen as the guidelines to shape the world value and to understand the human society. Though they are recognized as the theoretical foundation of development in many other disciplines, still development in technology is usually regarded as the most direct encounter with economy and society.

The second instrumental concern is that technology can be materialized into real products which can be bought and sold in the market. This nature makes international borrowing and lending possible. In Chapter Four, I mentioned that Castells (1994) and Carnoy (1999b) once the state wants to be part of an informational society, it will actively use policy to facilitate its learning from other technologically advanced nations, precisely being the case of China. In addition, during this reform, the international bilateral collaboration starts to proliferate, among which the technological cooperation is a most common form (Hayhoe, 1989). The central government does concern about the scientific foundation of technological development, and has serious doubt about the technology transfer unaccompanied by a theoretical foundation, which might lead to technological dependency and economic colonization. However, the utilitarian concern and urgent needs for finding a quick-fit solution are so overwhelming that science is giving way to technology. The vice-president of the Chinese Society for Science and Technology Journalism argued that by 2003, as estimated by the China Science and Technology Museum, the scientific reports accounted for just 0.6 percent of the total content of China’s media. The Project 211 and 985, which generously support polytechnics and engineering studies, also reveal this state-initiated strategy.

The third practical reason is the language. The international cooperation for humanity and social sciences is much rarer than technological cooperation, which does not require proficiency in foreign languages (Hayhoe, 1989). But the mastery of language has far more meaning than just the ability to read. Teaching of language is sensitive because it is most likely to open up a whole new world of cultural and social meanings, such a risk that the state does not want to take.
6.2 Prosper philosophy and social science studies carefully

From 1989 to 1992, as Hayhoe (1996) writes, new enrolments in humanity and social sciences were drastically cut and graduates faced difficulty in being employed. Teaching materials and research proposals were systematically investigated for traces of bourgeois liberalism. Political education, filled with orthodox Marxism, became the core of humanities and social sciences to wipe out liberalist thoughts and to restore a campus order. The philosophy and social science studies were seen as dangerous threats and forced to keep quiet.

In 1992, Deng Xiaoping made a tour to the southern China, urgently demanding economic development. He advised the Chinese people not to argue about capitalist or socialist: “Black cat or white cat, whatever catches the rat is a good cat”; “To be rich is glorious”; “Poverty is not socialism”. These words dragged people back from endless debates, and urged them to focus on their material gains. Deng and his cadre catalyzed university research in China, but mainly in technological disciplines.

The spring for humanity and social science research did not come until 2002, when the Party Chairman made a speech in RUC on prospering philosophy and social science research in the universities. I was a bachelor student in this university at that time and stood delightedly in the crowd, listening to the chairman and the university president addressing how the state was planning to make this university world top in humanity and social science research. It proved to be the beginning of rejuvenation of philosophy and social science studies after a long period of silence. The MOE issued the implementation plan in 2003 and put “prospering philosophy and social science research” into its Key Memorandum.

Since then, huge infrastructure investment started to flow into RUC and others

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1 History finds astonishing repetition that in the early 20th century, in China, “-ism” debate among Marxists, pragmatists, and local conservatists also ended up with urgent appeal to economic development (Harnett, 1998).

2 For brief introduction on this university, please refer to footnote 5 in Chapter One.
universities featured in humanity and social sciences. Many polytechnics also strived to build law schools, social science faculties, and schools of liberal arts. Philosophy and social science are appraised as the “theoretical tool and underlying fundamentals of all the other studies”, which can equip the society with the “weapon for correct thinking” (Li, 2004). These expectations do not please everyone. I have encountered several economists in my bachelor studies that have complex feelings towards these compliments. Some words are sharp and strong:

“When you are neglected, you relatively have freedom; when you are fully attended to, you can seldom do what is really in your academic heart. This situation is particularly true when the attention comes from the bureaucratic.”

“Lack of money does not kill scholarship, but lack of autonomy definitely will, especially in the case of humanity and social science research. We do not need that much money; what we do need is to protect our ability to think and reflect.”

“Social scientists, for instance, we economists sometimes need to know what the top (bureaucrats) want us to do. If they say 1+1=10, we try to rationalize the equation.”

It seems that the prosperity of humanity, philosophy and social science studies demands something beyond funding. But what type of prosperity does the state desire? The academics understand prosperity as “let one hundred flowers bloom; let one hundred schools of thought contend”\(^3\). However, the state sees philosophy and social science research important in building a socialist society with an advance culture and ideology, in raising the socialist consciousness and in providing the state legitimacy. If misused, it can be a dangerous source of liberal thoughts which will mislead the mass population and disrupt the social harmony. The leaders’ fear of liberal arts has its root since Mao’s time. He once commented on different types of intellectuals in China: engineers and technicians are the most receptive to socialism; scientists are the next;

\(^3\) The slogan, raised by Mao Zedong, was implemented by the CCP in the 1950s for open criticism of the communist government.
those who study liberal arts are the worst. Thus philosophy and social science research need to be managed very carefully. By no means would a transformational state, like China, love to see that a creative university goes beyond the rationality of a real good university into a bunch of revolutionaries against the existing social orders (Carnoy & Samoff, 1989). Year 1989, in this sense, is still haunting the authority.

6.3 Motif behind the policy change

The 1990s’ university reform in China shares many similar technicalities with the US, the Great Britain, and Norway. For example, the government allows more room for the private sector to support and participate in university management; market force becomes more obvious and socially recognized; the source of university funding is diversified; more stakeholders have their voice in what type of university research they need. However, in these western countries, university has for centuries been a most stable social form. The reform aims to bring changes to the traditional universities, making them more adaptive to the new environment.

In contrast, Chinese universities have never lived in peace. They have been always in the frontline of dramatic revolutions. If one reads the history of student movements in China since 20th century, it is easy to find that the prestigious universities were all the time leading the waves, right in the middle of a vortex. Thus a very important mission of the 1990s university reform is to stabilize this system, suffocating the revolutionary buds in this nutritious greenhouse.

In this sense, I believe that the 1990s reform in China has its peculiar driving forces. What are they?

The financial situation could be one motif. The government officials claim that resources are always limited, thus priority must be set on the foremost important fields, for instance technology and applied science. “We got to see the results of our funding”, says Li (2004: 72). Then what is important and what is not? These criteria are set behind the closed door.

Many Chinese universities claim that they are in a hard time, since they plan to
enrol more students, to recruit better professionals, to get more research projects approved, to implement, and to glorify their reputation. But for those prestigious universities, the problem does not lie in the amount of money. A major part of the funding is channelled in such bureaucracy and inefficiency that it gets wasted before any achievements can be seen. More funding, not so difficult, would hardly make any differences, probably only lead to a more significant waste, if the channels of funding do not get cleaned up. Indeed, the financial stringency concern was a driving motif for many countries which have conducted strategic reforms in their university system, as I have mentioned before. But for China, a one-party dominant regime, a strong central government and a high degree of resource mobility, it is not difficult to allocate funding for the research university. Thus I assume that the Chinese state reforms its research universities not for saving money.

The second possible motif is the national competitiveness, which basically means economic competitiveness. Economic development has for a long time been a foremost important task for China since early 20th century. Much has been achieved and lessons learned for the institutions of higher learning. But as Suzanne Pepper (1990: 128-129) says, “Desire for wealth and power in the face of poverty and weakness remains”, and the policy makers are particularly eager to find a quick-fix solution from the existing models.

During the Cultural Revolution between 1966 and 1976, the Chinese university is socially and politically recognized as a place for cultivating intellectuals from workers, peasants and soldiers and transforming existing intellectuals into real “proletarians” by recasting them to labour work. This was totally reversed by Deng Xiaoping’s modernization strategies. He claimed that China must keep up with the west in developing economy and improving Chinese people’s well-being. Industrialization is still the major task and the advantages of entering an informational age should catalyze the industrialization process. Science and technology is the golden key to achieve this goal, and university is a critical arena for addressing these priorities.
China’s economic reform was initiated in the late 1970s. The universities were granted greater autonomy in budget and income management, enrolment and recruitment. The social demands for useful university research and education are unprecedentedly high. Until the mid-1980s, the economic reform had achieved some progress, but also started to face obstacle from the rigid political system. People, led by the intellectual group, began to ask for more profound reform, a reform can allow an open and democratic society. Under this background, a political reform was put onto the agenda. The central leaders saw it as imperatives that without which China cannot succeed in economic sphere. To mention a few highlights in this wave of reform: 1) popular participation of decision making; 2) separation of party function from academic work; 3) less bureaucracy, more transparency in the whole process. The universities, more willingly and rapidly than other educational institutions, embraced this political reform to transform their academic system. Pepper (1990) observes that a surfeit of reforms—academic, economic, and political simultaneously, along with Western influence in both ideology and culture, overloaded Chinese universities, which ultimately leads to an irruption of anxiety in 1989, as often called the Tian’ananmen Event.

This is what by any means the Chinese leaders would try to prevent in 1990s reform: the efforts to learn from capitalist world and to create a place of advanced learning should not cultivate a group of revolutionaries against the existing social orders. Deng stated firmly to the 13th Central Committee meeting in 1990, saying that, “If the economy improves, other policies could succeed and Chinese people’s faith in socialism will be enhanced. If not, socialism not only in China but in the rest of the world will be endangered” (cited in Castells, 2000:311). His logic and determination is clear: economic development can be a panacea to other sickness.

Some earlier works on the Chinese universities deal with two contrasting models of higher learning—the revolution (socialism and communism) model versus the development (modernization and nation building) model (Chen, 1981; Rai, 1991). The revolutionary model has been far less radical since the Open Door and economic
reform. The party lays the emphasis on the development model. However, the 1989 event reminds party leaders that it is a very risky strategy not to impose correct ideological direction.

When the economic development faced institutional obstacles in the 1980s, the CCP leaders at that time tried to initiate an open, participatory discussion, and to carry out experimental projects in some key universities. This undoubtedly opened up the intellectuals’ horizon, and soon led to mass demonstrations all over China and the breakout of Tian’anmen Event in June 1989. Therefore the approaches taken in the 1980s proved to be risky and dangerous. The Chinese leadership would like to have their strategies adjusted in the 1990s. When the economy gets stifled with political and social problems, when those knowledgeable people cast doubt on the contemporary policies, what the policy makers do first is to readdress the foremost importance of economic development, then to convince the public that the social and political stability is the only way to guarantee that, and finally to legitimize the CCP’s central role in protecting this stability.

Thus, there is one crucial political concern to reform the China’s university, particularly those prestigious research universities—to expect them to function as a provider of legitimacy and thus political/social stabilizer.

Carnoy and Samoff (1990) talk about social transformation and education in the third world. They argue in their book that a clear relationship does exist in transitional countries between the increased bureaucratization and a heavier reliance on the traditional hierarchical formal schooling as the principle means of defining and transferring knowledge. The state prioritizes on its agenda that a mass society is created by means of bringing more citizens directly into the state-manipulated ideological apparatuses. The university is always used as an ideological instrument, or a weapon of thinking.

The state always defines what is knowledge and how should it be generated and conveyed. The work, or at least part of the work, of the research university is to
produce what is recognized by the state with certain amount of autonomy. The concept of “reciprocal legitimation” has been mentioned before; however, tensions are always there. It is very clear that the concerns for a predictable economic growth in the near future always overwhelm the other goals and contradicts ideological concerns in the sense that how universities can both serve the short-term growth in statistics and long-term development in quality, how the higher learning can be means to homogenize individuals into a collective society based on a participative and democratic principle, as well as to differentiate more qualified from less for the concerns of efficiency; and how a university which is thought-provoking and creative can always function for the rationality of a place of inquiry, and, at the same time, avoid driving the less repressed to become the revolutionaries of an existing social order.

The transitional states always have to control their knowledge regime. In China, the state is enormously powerful. In fact, the reform of the research university, as an integral part of the reform in a wider perspective, has to be understood as a political deliberation. As Castells says, “China’s modernization and international opening up is, and was, a deliberate state policy, designed and controlled, so far, by the leadership of the Communist Party… primarily, a nationalist revolution with socialist characteristics” (2000: 309). How the less-developed nations can catch up with the more advanced ones? Economists and social scientists give abundant illustrations that the states’ policy does have a significant role. Even in western societies such as the US, Britain and Norway, one can see the strengths and capacity of the states to initiate and implement new policies. What calls for attention is not the magnitude of the states’ influence and power, but the margins of the states’ limitation. It is illuminating to go back to Castells’ notion of the informational society, which, according to him, can only get full development in the capitalist institutions. Because the capitalism, unlike the statism, allocates and distributes surplus according to the market and economic rules, rather than to maximize the power holders’ own profit. Castells hypothesizes that the statism has intrinsic incapacity which will distort the free
flowing of information and a healthy market mechanism. This is a big obstacle for some countries to transform smoothly from an industrial society into an informational one. Castells (2000: 323-333) poses several serious problems China might face in furthering its development. He is aware of the fact that China has made substantial progress in developing its own national technological and scientific potential through domestic research and international cooperation. But he has deep doubt on whether the information technology revolution could ever succeed in a closed society where its people’s creativity, critical reflection and free thoughts have to be in the margins of political correctness.

In China, the state control has to face a paradoxical problem, which Harnett called “a vicious circle” (1998: 459): decentralization leading to disorder, disorder to recentralization, recentralization to paralysis, and paralysis to decentralization. Thus the state walks carefully with two legs—decentralizing some fields for the utilitarian use, and centralizing some studies for the ideological concerns. Decentralization refers to the technology and applied science, which have less political threat and higher economic potential. They get more money, more international cooperation, more integration with business and industry, and more autonomy in research and exploration. The social science and humanity research are centralized. Some subjects are expected to produce academic commodities with a market value, for instance, finance, economics, management, and law. Some are required to theorize the correct guidelines for other subjects. As Li (2004: 173) argues that the state emphasizes four innovations in China’s reform: theoretical, conceptual, institutional, and sci-technological innovations. The first three are the tasks of liberal arts and social sciences. Philosophy and social sciences are important, but they will deviate from the rightful direction if the party does not set the principles.

7.3 Conclusion

In this study, I started with analyzing a common global influence on the universities and their research activities. This global influence derives from the rise of an informational society, within which the knowledge becomes more crucial to
enhancing the national competitiveness in this global economy. This influence diffuses across the continents, from Ivy League in the US to the old universities in Britain, from the Nordic social democratic states to a less-developed China. Most states actively take strategic approaches in reforming their research universities. The states cast their influence mainly through alterations in their resource allocation system. In the small comparative study, the readers may see the states’ efforts to gear universities to meet social and economic needs, to integrate them with the industry and business sectors, to make them less dependent on the government funding, and to increase accountability in their spending. However, these strategic approaches differ in scope, pace and other specifics due to the different national economic conditions, how the states set priority in national development and the states’ subjective interpretation of the public role.

The Chinese state, like its foreign counterparts, also initiates a reform in the research university. This reform focuses on the structure of resource allocation, through which it gradually changes the administrative and power structure. The professoriate group has been affected by the market and the state, being asked for higher accountability and productivity. Apart from the common characteristics, there is something unique in the Chinese case.

Firstly, the Chinese development gateway has been mainly technological, though in the policy rhetoric, science and technology always appear in parallel. The technological achievement can most directly meet the market needs, and can be most easily transferred into an economic profit. The technology borrowing, compared with other international cooperation, is easier to be fulfilled. Very often it is seen as a quick-fit solution to the domestic problems. Language barrier that the social scientists and humanists often face is not a crucial problem in technological cooperation, which also benefits the technological collaboration.

Secondly, after many years’ neglect and underinvestment, the philosophy and social sciences studies started to revive since mid 1990s, when the state realized the importance of these subjects as a provider of fundamental thinking behind all the
other studies. This has for one hand given some related universities and faculties huge number of resources, and for the other hand framed restrictions for those disciplines which otherwise might have more freedom. The state has taken careful steps in this realm, trying to build a knowledge tank within the boundary of political correctness.

Thirdly, as illustrated in Chapter Five and the previous section in this Chapter, one can only better understand this reform, particularly the reform in the resource allocation system, within a political deliberation. The Chinese state initiates this reform not in the hopes that it would save the state a large part of budget. Rather it aims to build the national competency through the key institutions it decides to get hold at the expense of the majority left behind. More importantly, it expects those key universities to compose a knowledge empire, which serves both the economy and the state legitimacy.

So far I have discussed and answered all of the sub-questions raised in the introduction chapter. It is time to come back to my main research question: *why does the Chinese state, which aims high in polity and economy, has addressed its interest through research university reform in terms of resource allocation?* There are several key elements in this question. By changing the resource allocation structure, the state can easily mobilize huge amount of resources to the places where it mostly wants them to be, say those research universities of political and/or economical significance. The Chinese state has high ambitions in achieving economic development, thus it prioritizes those subjects which can produce up-dated S & T, can convert their research results into productivity, and can train a large number of quality personnel useful for a socialist construction. Only until the late 1990s, more emphasis is put onto the humanity and social science research for adequate provision of legitimacy for the state regime, and to equip the masses with correct thinking. On the other hand, the state uses resources to tightly control these places where the curiosity of pure scholarship, the inquiry about the nature and society, and the eagerness for truth and knowledge can turn out to be threats and risks to the sovereignty of the ruling party by the elitists within the campus; after all, through a fierce competition, those who can
finally get enrolled in these institutions are such a elite group that they love to read, think, argue and challenge. The state will by no means sacrifice its political stability for the economic development; in another word, it truly believes that only a stable regime can bring about sustainable development in economy, though the informational age asks for an open society to build necessary institutional infrastructure for the economic prosperity.

The Chinese research universities have followed a zigzag path since 100 years ago, learning from Japan, Europe, Soviet, and the United States. No doubt that these institutions are still going to be significant. The state needs them because they are now consumed with a functionalist imperative, setting up basis for economic development and indoctrinating ideology for the state apparatus. No doubt that the Chinese people, as well as the government, will still see university as valuable. But there is a vision for the Chinese universities to draw the merits of western systems while being deeply rooted in their indigenous culture and tradition (Hayhoe, 1996), to avoid being trapped by a short-sightedness business university illusion, and to become a wonderful “place of inquiry” (Clark, 1995) which produces and reproduce knowledge, culture and ability of thinking. This vision could be fragile, but relying on this vision, a bunch of idealists and practitioners can have strengths to go further.
Epilogue

Approaching the end of the thesis writing, I came across an event. I cannot say how typical this case is in the Chinese research universities; however, it does echo some findings of this study.

Fudan University, one of the most distinguished comprehensive research universities in China, also included in the Project 211 and 985, features in natural science, humanity, and social science studies. Located in Shanghai, the economic capital of China, Fudan University has just celebrated her centennial anniversary in 2005. Many faculties of Fudan University have a top national ranking, among which are the Faculty of Philosophy and the Law School.

Summer, 2005, just before Fudan’s centennial celebration, an American Chinese businessman made a phone call to the Foreign Affairs Office of Fudan University, wishing to make a donation of 650 thousand US dollars, to the Faculty of Philosophy. This businessman, Liao Kaiyuan, once educated in the Law School of Columbia University, used to read philosophy. He has a belief that philosophy is the basis for the further development of any other disciplines. The meeting between Mr. Liao and the dean of the faculty was arranged smoothly. The dean, Prof. Sun Chengshu, commented on this meeting as fruitful and pleasant. Mr. Liao was willing to supplement his donation up to 1.3 million US dollars to build more infrastructures and to establish a foundation for faculty’s in-career training. “Meeting with Mr. Liao has filled my mind with a blueprint of our future. I was in such excitements that for many days I could not even sleep”, Prof. Sun recalled afterwards, “Philosophy should stand out and raise its voice when the society confronts its accumulating contradictions and conflicts. I, together with my colleagues, believe that Mr. Liao’s support can increase the social recognition of the role of philosophy and can accelerate the transition from the Marx-Leninism philosophy to a much broader perspective”.

Sun’s excitement was soon taken over by anxiety since some news sneaked into

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1 This part of information was retrieved on March 24 from People Daily Online, Education Section Web site: [http://edu.people.com.cn/GB/1053/3804758.html](http://edu.people.com.cn/GB/1053/3804758.html)
the faculty that Mr. Liao had been put through, by university leaders, to the Law School for his donation. Sun and his colleagues wrote a letter to the president, urgently asking for the proper solution of this donation not for the sake of money but for the dignity of humanity and basic research. University leaders kept quiet until late October, when the Faculty of Philosophy was notified that the money had been formally transferred to the Law School, amount rising to 2.6 million US dollars.

Sinking in disappointment and sadness, Prof. Sun still had to comfort his faculty and students while negotiating with the university leaders about some middle way. “I understand the leaders’ decision. After all, the Law School is more capable of generating economic profit. In contrast, you can hardly see any direct achievements from investing on philosophy”, said Prof. Sun.

The Law School was in delight upon this donation. However, the details of how this amount should be spent were not specified. The Party Secretary of the Law School, Mr. Sun Rui, clarified in an interview that the Law School had not direct contact with the benefactor. The university leaders had already an overall plan. The faculty had only been informed that a part of this donation would be used for a new building. The rest amount would most likely be appropriated somewhere else. “We still don’t know when the building will be on construction and how it will look like”, says Mr. Sun.

The university leaders, later on, made an announcement to clarify several points². Firstly, the final plan was an optimal choice based on the benefactor’s willingness and the university’s practical needs; secondly, Fudan University had always recognized the importance of philosophy as a research discipline and would continue to support its development. Thus, “disciplinary discrimination” raised by some media contravened the facts; thirdly, faculty and students had already agreed upon the final decision; fourthly, Fudan University welcome attention from media and also reserved rights to prosecute irresponsible and fake media report.

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² This was announced by Fudan University News Agency on October 27, 2005. Official announcement on media report about donation transfer from the Faculty of Philosophy to the Law School in Fudan University. Retrieved March 24, 2006 from http://news.sina.com.cn/c/2005-10-27/18197286272s.shtml
Reflecting on this occurrence, I find several issues relevant to the problem I have been discussing in the thesis. First of all, whether “disciplinary discrimination” denied by university leaders does exist? The official announcement tried to hide its deliberation in transferring the donation to the Law Faculty. It just gave an ambiguous notion about the overall plan of the university development. Many faculty members, including the Dean of the Faculty of Philosophy, Prof. Sun, understood the leaders’ “overall plan” as maximizing economic profit. Law, compared with philosophy, is naturally deemed as more responsive to the market needs. The second point is autonomy. Autonomy of the faculty, of the professors, even of the benefactor is subordinated to the university. In this case, the benefactor at first planned to donate to the Faculty of Philosophy. After the intervention from the university leaders, the money was transferred to the Law School. In the end, the Law School was also ignorant of the overall plan. Most likely, it would only get part of the donation, with the rest going elsewhere. This is a hierarchical system with vertical control. The power holders are very cautious in bringing in new stakeholders who might demand sharing authority in the decision-making. The market and private sector is on one hand seen as financially supportive to the universities, and, on the other hand, regarded as distractions from an effective control.

To sum up, this occurrence has illustrated two points: firstly, the development of Chinese research universities has been following utilitarian concerns supported by a group of technocrats; secondly it is highly dominated by the leaders’ will.
Appendix: the old legacy

The Chinese higher education system originated thousands of years ago. It was based on a “shu yuan” system, a kind of private local-run elite academies, where a few senior talents led the disciples to recite the classic books. The main purpose of studying was to get political promotion through “ke ju”, the imperial examination system. There was hardly any interacted learning or teacher-student collaboration. The whole system sustained through the annually-held stratified exams. The exams started from every single village, through township, county, province, region, finally ended in the national level. This pyramid was built for recruiting government officials, and for indoctrinating state ideology generation after generation. This scenario started to change after 1905, when the imperial examinations were abolished.

Years of trials and failures—1911-1949

Six years after 1905, the 1911 revolution overthrew the imperial system, paving the way for learning from the west, and marking an unprecedented break between intellectuals and political power (Pepper, 1990).

In 1917, when Cai, Yuanpei was appointed to the Chancellor of Peking University (PKU), the first modern university in China, research was for the first time integrated with teaching, university autonomy and academic freedom protected, and “professional rule” (jiaoshou zhixiao) envisioned. Cai, educated in France and Germany, was greatly influenced by the European ideas of university. He believed that the university was neither a factory producing qualifications nor a market selling knowledge. Scholars should always be driven by curiosity and be detached from the political ideological control. The university community should be related indirectly, through critical free debates, rather than directly, through political activism, to a wider society (Hayhoe, 1996). Cai’s idea of pure scientific research was quickly taken over by a strong American wind when John Dewey travelled to China during 1919-1921. People applauded his pragmatism as a short-cut to the modernization. The professionals’ power was weakened and a American style board of managers was first
adopted. The university autonomy gradually gave way to the utility of knowledge (Harnett, 1998; Hayhoe, 1996; see also Pepper, 1990). Learning from the west was a major concern of the local educationists and policy makers. Tao Xingzhi, a distinguished educationist, an alumnus of Columbia University, once commented that China at first sacrificed everything old for the new, but gradually she came to realize that it might not be wise; thus she became more critical (Keenan, 1977; see also Cleverley, 1991: 51).

Until 1927 when the Nationalist regime got established, there were four types of HEIs: 1) the state-financed comprehensive universities, such as PKU; 2) the foreign-sponsored national comprehensive universities, such as Tsinghua University and Nankai University$^1$; 3) the local private colleges, funded by the local gentry or bureaucratic, such as Fudan University in Shanghai; 4) the western missionary colleges, mainly church-based Christian colleges (Harnett, 1998). The state control gradually intruded into the academia. The humanities and social science studies, once deemed as dangerous to encourage political heterodoxy and student unrest, substantially shrunk their enrolment and faculty recruitment; but science, engineering, agriculture and medicine faculties expanded tremendously (Cleverley, 1991: 57; Harnett, 1996: 108, 143). The western curricula were carefully censored to eliminate the elements which contained cultural imperialism; but on the other hand the government welcomed some western philosophy such as social Darwinism since it supported a strong state control and science advancement. “By making university more political, the nationalist government also made it overly purposeful” (Cleverley, 1991: 69); it partly explains why during the exodus and civil wartime, the Chinese university still survived and even thrived. 91 HEI in 1937 expanded to 143 in 1944, and 207 in 1947, the number of students multiplying (Harnett, 1998: 141-142; Hayhoe, 1996: 56). The universities have unexpectedly enjoyed a high level of free teaching

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$^1$ Tsinghua University evolved from a language school preparing young Chinese to study in the U.S. It was funded by Boxer Indemnity Funds in 1908 and gradually turned into a national university in 1926. Nankai University was established by Zhang Bolin, a Columbia University alumnus, but sponsored by Rockefeller Foundation.
Another line of the Chinese university also developed during the wartime—the Communist higher education. The first comprehensive CCP University was established in the border-region (bian qu). Its main task was to train the party cadres, to cultivate qualified soldiers for defences, and to spiritually indoctrinate Sino-Marxist ideology. The CCP’s mass-line (dazhong luxian) enrolment attracted more participation and support, far more successful than Kuo Ming Tang (KMT)’s elitist way (Harnett, 1998). During the war, the humanity subjects slightly decreased in enrolment, pure science experienced a steep slope down, but engineering, economics and finance graduated more students than ever before.

This 38-year-period was a long, zigzag journey for the Chinese universities, full of trials and errors. Cleverley (1991) argued that both the foreign invaders and the Nationalist government were too weak to finance the Chinese universities. However, the credit side of this incapability is that they were also too weak to control the universities. The KMT insisted that the university should legitimize the regime and support the party’s policies, but they could not make the universities obey. Later on the CCP adopted a very similar approach, with a more rigorous and radical synthesis of developmental modernism and utopia socialism, aiming to achieve a state order fulfilling the mandates of “the people” (renmin).

Years of new order—1949-1978

What the new regime inherited from the war was an amalgam of residual classical education, a mixture of American and European influence, and an education system based on the nationalist ideology (Chen, 1981). The state urgently needed to restore a strong national economy and polity as soon as possible.

The First National Conference on Higher Education in 1950 formulated a framework for the university development in the new republic (Harnett, 1998). The Education Minister enunciated several objectives: to train a high-level personnel for
the national development; to serve the people and national economy; to develop S & T education; to provide higher education to workers and peasants. Politically, the CCP strengthened the political and ideological education in all level schooling, carefully removing the dangerous elements from curricula to remould the people’s mind (Chen, 1981; Harnett, 1998); technically, the state gave the first priority to scientific research, conducted mainly by the Chinese Academy of Science and its regional offices. The state expected to achieve distinguished academic results while making education a sharp weapon to defend this new-born socialist regime. Chen (1981) called it the conflict between the academic mode and the revolutionary mode, conflicting ends and means intensified in the later years, bringing disastrous consequences.

The first decade after liberation, China, in her honeymoon with the Soviet, copied everything from her communist big brother. Research and teaching were separated: the universities were responsible for teaching, while research were conducted in the academies. The party leftists, led by Mao Zedong, attacked academic study, believing that the university education should benefit industrial production. The CCP tightly “regularized, systemized, rationalized, and centralized” universities (Harnett, 1998: 192), which politically distracted the intellectuals from independent work.

Collecting data from 1949 to the dawn of the Culture Revolution, Harnett (1998) detects an overall enrolment expansion in the higher education system, but most of increases occurred in the fields of engineering, agriculture, medicine, natural science at the cost of shrinking in economics, finance, teacher’ training and humanities. Short-term programmes flourished. People saw downsizing in the comprehensive universities, cut in the fields such as sociology and anthropology, roaring increase in polytechnics and specialized colleges affiliated with the central ministries and provincial governments. In the short term, learning from the Soviet had some benefits: it cultivated a large group of technicians and built a technological foundation for further S & T development.

Hayhoe & Zhong (1995) once studied the relationship between the scientific
development and universities in China. They argue that late 1950s and early 1960s was a golden era for China to make scientific breakthrough. The universities just recovered from excessive radicalism in the Great Leap Forward and attempted to adapt the Soviet model to the reality, through combining teaching and research within the universities and cultivating intellectual communities. However, these efforts were smashed by the struggle between the academic model and the revolutionary model, intensified in one-decade Cultural Revolution from 1966 to 1976. Mao Zedong’s mass-line higher education went to extreme during that red storm. The main idea of this unprecedented mobilization was to re-educate the intellectual by unifying them with the peasants and the workers, to address the importance of labour work over the academics, to decentralize the decision-making to the local level, to promote the leadership of proletarian leadership, and to establish a mechanism with the rule of non-professionals (Chen, 1981; Harnett, 1998; Pepper, 1996).

The struggle between the academic elitism and the revolutionary massification had been in a tenuous conflict. Before the Cultural Revolution, these two modes had already penetrated and influenced each other, but Mao was not satisfied with the disparity between different social classes in their access to the university education, particularly an emerging elite group of the intellectuals. Though his intention could not be totally condemned, the academic condition of Chinese universities greatly deteriorated. These ten years left a highly bureaucratic university system, an anarchical air everywhere, and increasing doubt of authorities and value of education. It was a dark period for the Chinese universities. Radicalism had pushed not only the universities, but also the whole national economy into the edge of collapse.

**Years of reform and crisis—1978-1989**

The reform started in 1978 at the National Science Conference and the Fifth National Education Work Conference, when Deng Xiaoping totally reversed priorities set by Cultural Revolution, including class struggle, mass mobilization, proletarianizing intellectuals, vocationalizing higher education, and political labelling of “rightist” and “counterrevolutionary”. They are discarded as detrimental to the
national modernization and economic restoration. Deng and his cadre pointed out the future direction for higher learning. In qualitative terms, the education is expected to serve “the Four Modernisations—agriculture, industry, defence, and sci-technology” (Cleverly, 1991). The economic reform and open-door policy were two main strategies. The reform re-addressed the role of private and public sector and emphasized a technological base for economic development. The open-door policy implied foreign borrowing and international cooperation in all possible way. Hayhoe (1989) analyzes the international cooperative educational projects in China after the open-door policy, among which management science and technology are most popular. The university education and research became more open, diverse, and economically significant.

The national college entrance examinations, the enrolment and job assignment system, the uniform curricula, once abolished during the Cultural Revolution, were restored between 1977 and 1978. Deng made a trip to the US in 1978, urging 10,000 students to follow him and all top officials to pay at least one visit to the west to see how the western way can be grafted onto the Chinese conditions (Pepper, 1990: 132-134). The Peking University President, along with other university people, paid a visit to the North America in 1980; being highly impressed, he proposed an influential academic reform agenda which mainly referred to the American model in staff recruitment, flexibility in choosing major, credit system, professoriate rule. The late 1970s reform introduced the western concept of development and modernisation into the academia.

The CCP announced the ever-largest-scale education reform in 1985. *The Decision of the CCP on the Reform of China’s Educational Structure* proposed major guidelines under the principle that “Education must serve the socialist construction, which in turn must rely on education” (CCP, 1985: 1). Mao Zedong’s mass-line higher education was substituted by Deng’s elitist approach to mobilize resources to rebuilding higher education. Key schools, where more capable students are enrolled and taught with better equipment and more teaching resources, were marked at all
level. Cleverley (1991: 229) sees these key schools as the biggest intake of brightest young generations and the main platform for the international borrowing. They manifest the state’s ambitions to reach the world standard as fast as possible. Pepper (1990) mentioned that the higher education obtained disproportionately heavy funding at the expense of lower level education. Hayhoe (1996) perceived unprecedented high institutional autonomy within the universities since 1980, making HEIs more accountable and financially more independent. Business started to run over some universities as a supplement source of money, supported by the State Education Commission’s policy. Cleverley (1991) analyzed the entrepreneurial forces in Chinese universities 1980s, mentioning that some academics were aware of the negative effect of a close business-academic relationship, for instance, inhibiting basic research, diverting necessary funding from teaching, and degrading academic criteria to the capacity for fund-raising. According to Pepper (1990), these critics were stimulated by a rising self-esteem and individualism of the university people, who felt themselves to be the elite group and responsible to provide the policy makers with reasonable and visionary advice. This elite mentality encouraged them to raise voice, also sank their heart down when they found their interest fundamentally diverge from the bureaucrats.

Lewin, Xu, Little & Jiwei (1994: 4-5) summarize the societal and educational trends and changes in China in different historical periods since 1949.
Societal and Educational Trends and Changes in China

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<th>Societal</th>
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<tr>
<td><strong>1977—1985</strong></td>
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<tr>
<td>Four modernizations</td>
<td>Redevelopment of higher education</td>
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<td>De-collectivism</td>
<td>Reintroduction of &quot;key schools&quot;</td>
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<td>Pragmatism</td>
<td>Academic over ideological</td>
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<td>Economic rehabilitation</td>
<td>Growth of technical and vocational education</td>
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<td><strong>1986—1988</strong></td>
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<td>Open-door policy</td>
<td>Over expansion of HE</td>
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<td>Special economic zones</td>
<td>More autonomy to presidents</td>
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<tr>
<td>Joint Venture companies</td>
<td>Professionals dominant over Party</td>
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<tr>
<td>High economic growth</td>
<td>Overseas study</td>
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<td>Inflation</td>
<td>Mismatches with job placement</td>
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<td><strong>1989—1991</strong></td>
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<tr>
<td>Recession</td>
<td>Growth halted</td>
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<td>Ideological conflict</td>
<td>Politics class reintroduced</td>
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<tr>
<td>Leftist conservatives</td>
<td>Military service for some universities</td>
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<tr>
<td>Politics in control</td>
<td>Party dominant over professionals</td>
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<td>International isolation</td>
<td>Recentralization</td>
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The first half of the reforming era was featured by the “expanding hope and promise for most universities” (Hayhoe, 1996: 119). The society was content with the increasing access to higher learning. Social recognition for knowledge is mounting. The central and provincial government tried hard to make university education accessible and available to everyone who desires it. The gap between China and the advanced western world seemed to decrease, giving people confidence to the state regime. The second half of the period witnessed many problems emerging from the reform. It ended up with a violent response to the existing social order in 1989, partly due to the inability of political system to adapt to the wider social appeal for power restructure. Also some scholars believe that economic reform actually failed and political corruption deteriorated the economic situation (Hayhoe, 1996). The academic and university students’ enthusiasm hit the wall while they realized that a lot of structural problems were actually far beyond their capability (Pepper, 1991).
Despite of this step back, the whole higher education system still revived itself somehow. The enrolment increased from less than 800 thousands in 1977 to 2066 thousands in 1988, with decline in primary and second schools. Research and teaching were integrated within key universities since early 1980s. The National Science Research Foundation was established, followed by a reform of the S & T management system, to promote basic and applied research linked with technological development and production. The data in 1987 shows that, the government budgetary support for R & D reached 72.6% of the overall 959 million yuan. Two types of research units—the universities and the research institutions affiliated with the Chinese Academy of Sciences and the Chinese Academy of Social Sciences—started to cooperate to set up laboratories. The university research in energy, transportation, communication, raw materials, machinery, electronics, and biotechnology became more integrated into productive sector (Cleverley, 1991).
References


Kogan, M. (2002). The role of different groups in policy-making and implementation: institutional


Humanities.


Tjeldvoll, A. (February 2006) *Personal Correspondence*.


Welle-Strand, A. & Tjeldvoll, A. *ICT, learning & Value creation-- strategies missing?* Research report 6/2002 Norwegian School of Management BI


Wikipedia Keynesian Economics Retrieved October 10, 2006 from Wikipedia Web site:  
http://en.wikipedia.org/wiki/Keynesian_economics


http://www.chinaelections.com/readnews.asp?newsid={B3D7EBBE-4E7C-41C5-B9F4-20D9877A5972}

http://www.chinaelections.com/readnews.asp?newsid={B3D7EBBE-4E7C-41C5-B9F4-20D9877A5972}

Ye, Huijue. (2004) *A brake for university merger doesn’t stop the interdisciplinary trend.* Retrieved March 4, 2006 from Education On-line Web site:  
http://jiaoshi.eol.cn/article/20041031/3119271.shtml

Zhang, Weiying. (2003, June 16). *Explanation of the second draft for Reform Proposal on Recruitment and Promotion in Peking University (Amendment).* Original source:  
http://pkunews.pku.edu.cn/gaige.htm Retrieved January 9, 2005 from Chinese
Academy of Sciences Web site:


www.ep-china.net/content/academic/c/20050224172141.htm


http://web.asnc.edu.cn/yuanban/read.asp?id=865