

# **Brain Drain and Brain Gain in China since 1978**

The Impact of Internationalization and Globalization

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## **Abstract**

After the Cultural Revolution, China faced a lot of problems and challenges. The country was waiting to be reconstructed and developed. To build China into a modern and powerful nation, it's extremely crucial to increase the development of economy. Education, particularly higher education is seen as the engine of economic growth. Therefore, Deng proposed and implemented the Open Door policy in 1978, which was a historical turning point in China and marked the new beginning of internationalizing China. In the process of internationalization in China, the country sent and encouraged many students and scholars to study abroad in developed countries. However, they didn't return back as what the Chinese government expected. Thus, "brain drain" in the new era happened in China.

This paper aims to explore the policies on the issue of studying abroad in China since 1978, focusing on "brain drain" and "brain gain". The following questions are discussed in the paper: What are the reasons that triggered brain drain? Why do more and more Chinese tend to return? What kind of policies has the Chinese government to reduce brain drain and increase brain gain? To what extend has the role of Chinese government been changed? What policies have developed countries employed on the issue? Is it brain drain and/or brain gain for China?

Through the study, the author hopes to lead the reader to make a better understanding of China's policies on the issue of studying abroad since 1978 and to shed light on the future study on the issue of "brain drain" and/or "brain gain" in China and other countries.

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# Acronyms

CAS----Chinese Academy of Sciences

CASS----Chinese Academy of Social Sciences

CCP----Chinese Communist Party

CIDA----Canadian International Development Agency

CIECB----China International Examinations Coordination Bureau

GRE----The Graduate Record Exam

JSPS----Japan Society for the Promotion of Science

MOE----Ministry of Education

OECD----Organization for Economic Co-operation and Development

SEDC----The State Education Commission

TOEFL----The Test of English as a Foreign Language

UNESCO----United Nations Educational, Scientific, and Cultural Organization

USIA----United States Information Agency

WTO----World Trade Organization



# 1. Introduction

## 1.1 The macro context and background of the study

The Cultural Revolution, which was initiated by Mao Zedong in 1966, lasted ten years and plunged the whole of China<sup>1</sup> into turmoil affecting every facet of Chinese society. But it was education, especially higher education that suffered the most severe disruption and the most serious consequences (Fingar & Reed, 1982). Challenges were many and great. How did the Chinese nation manage to arise like a phoenix after this seemingly irreversible misfortune? What did they do?

Deng Xiaoping, the chief architect of the Open door Policy and other Chinese reforms, proposed in 1983: "Education should be geared toward modernization, the world, and the future". This guideline implied the world was getting more internationalized and globalised. All the countries, especially the developing countries like China, must integrate into the international and global political economy to develop their own country's economy. In this process, knowledge has become a springboard for economic growth and development, making the promotion of a culture that supports its creation and dissemination a vital task. The knowledge, skills, and resourcefulness of people are increasingly critical to China's economy.

Since 1978, China opened the door to the outside world. After two decades, China's economy is one of the fastest growing in the world and is being increasingly subsumed into a global economy. This is partly due to good opportunities China got

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<sup>1</sup> In this thesis, it refers to the mainland of China, excluding Hong Kong Special Administrative Region, Macao Special Administrative Region and Taiwan.

in internationalization and globalization. The internationalization of China was not only in the economic and political aspects. Higher education institutions also got more internationalized and co-operated with many developed foreign institutions of higher education. Thus, more and more scholars and students went abroad through international exchanges or on their own paying. According to statistics, till 1999 the number of graduate students who have studied abroad reached 173,209. However, the number of various types of people who went overseas to study since the Open Door policy is over 700,000 till 2003 (haiguiss.org, 2005).

Reviewing the Chinese documents on studying abroad, we can find that in the beginning of 1979, the government of the People's Republic of China, hoping to catch up with Western science and technology, decided for the first time since 1949 to send large numbers of students and scholars to the West to study. While significant numbers of people returned before 1986, after 1987 the ratio of returnees to those leaving dropped significantly. After the June 4, 1989, Tiananmen incident and the U.S. government's decision to allow any mainland Chinese who was then in the United States to apply for permanent residency, the probability that people would return dropped even more precipitously.

Suddenly China found itself in the same situation as many developing countries: sending their "best and brightest" to the Western developed countries triggered a "brain drain", and with it the threat that the strategy of sending people abroad to catch up might backfire.

However, once China opened the door to the outside world, it is difficult to close it again. When Chinese people realize that there are more advanced and developed systems outside of China, they anticipate experiencing differences in the West first and foremost through studying abroad. Moreover, under the impact of

internationalization and globalization, Chinese policies on studying overseas have to be liberalized.

## **1.2 The role and development of higher education in the context of economic reform**

Within this context of reform and the priorities of efficiency and quality, Chinese higher education institutions play two vital roles in sustaining economic growth rates and in facilitating socially and environmentally responsible development in the country. First, Chinese higher education institutions prepare citizens to fill high-level scientific, technical, professional and managerial positions in the public and private sectors. Second, in their capacities as repositories, generators, and communications of knowledge, Chinese higher education institutions underpin internal technological advancement, particularly in transforming research and development results for industrial productivity, and provide access to and adaptation of ideas from elsewhere in the world (World Bank, 1997).

To build the relatively poor and backward China into a modern, powerful nation within some 20 years presented a particularly great challenge to institutions of higher learning which are “charged with the important task of training advanced specialized personnel” (CCP, 1985) urgently needed for this ambitious goal. Therefore, with the shift in emphasis, a series of policy readjustments had been made in Chinese higher education with regard to management, structure, curriculum, students, faculty and exchanges with other countries. These reform measures brought about major changes in Chinese higher education. In the last two decades, the 1978-2002 period witnessed remarkable proliferation of public regular higher education institutions from 598 to 1396, and extension of enrolment from 0.86 million to 9.03 million full-time students in undergraduate and short-cycle courses. Graduate enrolment rose from zero to 0.2

million<sup>2</sup>. The proportion of the appropriate age cohort enrolment in regular higher education institutions was up to 15% in 2002, quadrupling 3.5% in 1990 (MOE, 2004). According to the three periods Trow (1974) distinguished, China has already come to the massification of higher education.

Besides the growth in numbers and enrolments, Chinese higher education experienced a dramatic diversification of institutional types and echelons: two- or three-year colleges devoted to vocational and technical programs had been established; private college and universities, which had been closed after the Communists came to power in 1949, reappeared; adult education institutions mushroomed. Chinese higher education institutions began to cooperate with higher institutions in developed countries in the 1970s, and cooperation became closer and more prosperous since the 1980s. In addition, the former rigid and excessive governmental control had gradually been replaced by a relatively flexible management system under the guidance of unified educational policies and plans of the state (CCP, 1985). By 2002 the reform of Chinese higher education was still continuing with much vigour. Building on its own strengths and absorbing salient features of foreign pattern and practices, a new Chinese higher education system was taking shape, slowly during the first decade since 1978 but rapidly in the last decade of the 20<sup>th</sup> century (Zhou, 2003).

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<sup>2</sup> During the period of the Cultural Revolution, graduate education was once broken. In 1978, with the implementation of Chinese reform and open policy, and with the overall recovery and development of education and science, graduate education was restored after 12 years broken.

### **1.3 Aim and research questions of the study**

China is an interesting case when we study the policies on the issue of Chinese studying abroad. In the more internationalized and globalised world, China changed rapidly from isolation to open door in order to have economic growth. The steering model has been changed from complete state control to the market-oriented steering; meanwhile China has not intention to become a capitalist country.

With the intention of increasing economic development in China, the country began to send many graduate students and scholars abroad to study. The number of graduate students who went abroad to study increased significantly, especially during the 1990s; while the proportion of students returning to China did not increase to the same extent. Considering this dilemma, the aim of this study is to examine impacts of internationalization and globalization on higher education policy in China generally and on Chinese students and scholars' international mobility particularly, to overview the reasons for “brain drain” and “brain gain” in China, and to explore whether the changes of steering model in China is an impact of national policy or an impact of internationalization and globalization.

Consequently, the research questions are elaborated upon as follows:

- 1) What are the changes and reasons on the issue of people studying abroad and returning in China?
- 2) How has the Chinese government tried to stimulate students to study abroad and what are the impacts of policies in other countries?
- 3) How has the Chinese government tried to attract students to come back and what are the main challenges?

- 4) What are the changes of governing in China when the country integrates into internationalization and globalization and faces the dilemma of “brain drain” and “brain gain”? To what extent is the strong state steering and regulation possible or appropriate when the door is opened?
- 5) Is the consequence of increased international student and scholar mobility in China “brain drain” or “brain gain”?

## **1.4 Methodology and data**

This study can be characterized as a form of policy analysis employing following methods. It comprises a literature search with particular references to document evidence, and results of some empirical studies were used and analyzed. Theories inspire and frame my research, yet the appropriate use of data and methodology makes possible an effective search for the answer within the framework. A theoretical framework for my study will be elaborated upon in chapter 2.

This section explains what methods my study chooses and what major sources of data are collected for the study. Since the study has a predominantly explorative and descriptive character and relevant data collection is difficult, it is of great importance to consider the limitations of data and value the data that has been used properly. Data limitation will be discussed in section 1.4.3.

Basically it is held that there are two major overall approaches in social science research—the qualitative approach and the quantitative approach. Social researchers usually choose from alternative approaches to studying the social world. After synthesis of the approaches revealed in the literature and applied to my topic, I outlined two main chapters (3 and 4). In chapters 3 and 4 there are some quantitative

data collection and the analysis of policies on the issue of “brain drain” and “brain gain” from both China and developed countries since 1978. There are also lots of qualitative data are used to analyze the issue of “brain drain” and “brain gain” from individual and policy perspectives. In these two chapters, both quantitative data (statistics on the number of scholars and students going abroad and returning by year) and qualitative data (mainly policy documents and statements) are used. Mixed methods are most appropriate since the study is exploratory. Therefore, document and data analysis is the primary approach that I used to address my research questions. Moreover, the research on the issue of brain drain and brain gain in China since 1978 should be based on the availability of data, both primary and secondary sources.

#### **1.4.1 Primary sources of data collection**

As I mentioned earlier, it's very difficult and complicated to collect data on the number of Chinese students and scholars studying overseas and their returning. The access to relevant data is limited from other countries or sources.

Therefore, I decided to find descriptive information that will give an idea of the work encouraged by the Chinese government, including the policies and conferences on the issue of “brain drain”. The quantitative data I use here are the statistics from National Bureau of Statistics in China and China Education and Research Networks, and the survey results published by the Ministry of Education (MOE) in China or on Chinese internet pages. No description is given on how the data was collected, and a statement is made that this is not all-inclusive survey. Given all the limitations of data (mentioned in 1.4.3), these data still offer a rough description of the development of brain drain year by year.

As to the qualitative data, I try to locate my analysis in various government documents, especially those about policies on Chinese studying abroad. All the

different pieces will then be synthesized and analyzed to identify the rationales expressed by the Chinese government on studying overseas policy-making. In my study on reasons and development of “brain drain” and “brain gain”, there are two sources from which I collect my data.

Firstly, most of the qualitative data are obtained from Chinese National Bureau of Statistics, the MOE website and some other Chinese internet pages. I examined official speeches and government documents directly and indirectly address the issue of studying overseas and other relevant issues about “brain drain” from 1970s till now. Moreover, I examined national and local government documents about incentives of attracting people to return back in the last two decades.

Secondly, many primary sources are from reports of innovations and experiments published in an increasing number of journals on higher education by Chinese and organizations and institutions. Some of these documents are written in Chinese. In addition, some sources of the document data in English are taken from the reports by the World Bank, UNESCO and some researchers in their study of China in close collaboration with the Chinese government.

#### **1.4.2 Secondary sources of data**

The secondary sources of data for this study were very important and drawn from the researches by scholars in many parts of the world. Though there are not many books and articles focusing on the issue of brain drain and brain gain in China particularly, they do deal with and analyze specific issues from many other in-depth and thought-provoking perspectives.



### **1.4.3 Data limitations**

The quantitative data on which the study is based are mainly collected from governments and survey results at the national level. They are not all-inclusive. The real numbers of students and scholars studying abroad and returning back stand “not available or blank” in some years. Sometimes the data was shown every three years, and sometimes every five years. The formidable barrier is that there is no uniform system of statistics on the number and characteristics of Chinese students and scholars studying abroad.

Another limitation of data is that there exist some statistical errors. Firstly, Chinese who go abroad with other types of visas than student visa and shift to student visa afterwards are not included in the data sources in China. Secondly, overseas Chinese who originally come from, for example Vietnam, Singapore or Malaysia are counted as Chinese from the main land of China by foreign statisticians. Finally, the statistics of Chinese studying abroad often exclude the students and scholars from Taiwan. Though Taiwan does belong to China, it is still a controversial topic in the international debates because of some Chinese historical reasons.

All these will affect the accurate analysis on the issue and make it difficult to find the real trend. However, considering the lack of data and complexity and difficulty of collecting data in this field of study, I trust and conduct the current data in my study even though they are not perfect.

## **1.5 Structure of the thesis**

The following gives a brief outline of the structure of this thesis.

Chapter 2 presents a theoretical framework for the analysis of policies on the issue of “brain drain” and “brain gain”. Western theoretical concepts, like internationalization and globalization, the triangle of coordination, state steering models, are interpreted in the context of China and Chinese policy-making. Push and pull factors are addressed in the analysis of the issue of “brain drain” and “brain gain”.

Chapter 3 begins with a broad overview about general development in China since 1978. Then, the factors that pushed people out of China and the factors from Western developed countries that pull Chinese students and scholars in are analyzed. Finally, the implications of Chinese policies on the issue of people studying abroad are explored.

Chapter 4 analyzes policies on how and what the Chinese government had done to attract Chinese students and scholars to return. Moreover, the emphasis is on how China can reverse “brain drain” to “brain gain” in the more opened and market-oriented society.

Chapter 5 tries to discuss the implications of the changes in steering model regarding student and scholar’ mobility and whether it is “brain drain” and /or “brain gain” for China. In the end some questions are raised for further research and discussion.

## **2. A theoretical exploration**

Brain drain in China is not a new phenomenon, but no appropriate literatures, approaches and precise data in China are available for this study. Western theories and discussions on this issue are borrowed and applied in the Chinese context. This chapter begins with the discussion about definition, impact and consequences of internationalization and globalization, which provides a conceptual base for how and why “brain drain” happened in China. After that some theories of policy- making and understanding are reviewed since the study is mainly focused on analysis of policies. Finally, it considers causes of “brain drain” and “brain gain” as “push and pull” factors from individual and policy perspectives.

### **2.1 Internationalization and globalization**

#### **2.1.1 Definitions**

The confusion about the meanings of internationalization and globalization has always been apparent. Globalization has already been discussed first and foremost in economic terms, secondly in political terms, and last but not least it is called a phenomenon of a global culture. Arimoto (2002: 127) also states globalization is spreading from the economic and political spheres into culture, and higher education is being globalised.

According to van der Wende and Huisman (2004: 8), it is clear that globalization cannot simply be seen as a higher form of internationalization (Scott, 1998). Internationalization refers to the increasing interconnectedness of nations without boundaries. In contrast, globalization refers to the increasing integration of flows and processes over and through boundaries and does challenge the role of national

governments. Furthermore, globalization is perceived as an external process upon which individual actors and institutions can exercise little influence and is associated with competition. Internationalization is seen more as a steerable policy process and is associated with co-operation. Internationalization is therefore often seen as a response to globalization in terms of co-operation for enhanced competitiveness (van der Wende, 2002).

Supporting the above opinions, Beerkens (2004: 17) states further that globalization will shape international flows and these flows again foster globalization, and internationalization can be regarded as a contributor to globalization.

In Altbach's analysis on globalization and the university (2004: 5-6), globalization is defined as the broad economic, technological, and scientific trends that directly affect higher education and are largely inevitable. Politics and culture are also part of the new global realities. Internationalization includes specific policies and programmes undertaken by governments, academic systems and institutions, and even individual departments or institutions to cope with or exploit globalization. Internationalization describes the voluntary and perhaps creative ways of coping. Internationalization accommodates a significant degree of autonomy and initiative (Knight, 1997; Scott, 1998; de Wit, 2002). Globalization cannot be completely avoided. History shows that when universities shut themselves off from economic and societal trends they become moribund and irrelevant.

### **2.1.2 Opportunities and challenges**

Particularly regarding the possible impact of globalisation on the poorest nations, Appadurai (2000) describes globalization as a world of things in motion, a world of flows. There are flows of ideas, ideologies, people and goods, images and messages, technologies and techniques. The knowledge economy, globalization and

internationalization have huge impact on China. They bring opportunities, meanwhile challenges and threats come to the fore as well.

### ***Opportunities***

There have been many significant changes in the global environment. Mainly there are four change factors that the World Bank report (2002:8) states: (1) growing role of knowledge, (2) ICT revolution, (3) global labor market and (4) political and social change. Furthermore, the report lists several opportunities under globalization and the knowledge economy, such as possibility of leapfrogging in economic growth; resolution of social problems; easier access to knowledge and information, to expertise, skills and knowledge embedded in professionals; positive environment for reform. All these we can find in the Chinese context in the fields of economy, politics and education.

### ***Challenges***

However, on the other side of the coin, threats come to the fore at the same time. Firstly, growing role of knowledge may increase knowledge gaps between nations. Secondly, the ICT revolution may lead to growing digital divide among and within nations. Thirdly, the global labor market may possibly make developing countries suffer from the growing brain drain and loss of advanced human capital on one hand; and it may make these countries get brain gain on the other hand. In this way, the disparity between the rich and the poor may become more obvious within and between nations.

#### **2.1.3 “Brain drain” and “brain gain”**

Globalization is a worldwide and systemic process where national economies have become increasingly integrated, interconnected and mutually interdependent (Trondal, 2002). In order to develop economy, countries pay much more attention to

the production of knowledge as knowledge is a key factor in the development in every country in the world and knowledge economies after all need large numbers of highly educated people (van der Wende, 2002:41). The university is by nature a knowledge-based association, an organization whose foundation is knowledge (Arimoto, 2002: 127). Therefore, within the new global marketplace, education becomes less a part of social and cultural policy and more a part of economic policy. Governments have attempted to coerce universities to become more enterprising and competitive (Altbach, eds., 2003: 11) so as to win the “battle”.

However, the negative effects of heightened international competition can weaken the position of particular countries and institutions in relation to others through such mechanism as brain drain (van der Wende, 2002:47). Globalization, declining communication and transportation costs, and the opening of political borders combine to facilitate increased movements of skilled people. This dynamic is de facto leading to a global market for advanced human capital in which individuals with tertiary education are the most likely to participate (Carrington & Detragiache, 1999). Altbach (2004: 7) shares the same opinion and says, “In some ways, globalization opens access and makes it easier for students and scholars to study and work anywhere”. The emergence of a worldwide labor market is one of the most influential changes (World Bank, 2002: 7). With the current irresistible globalization, any nation cannot only allow free movement of information, goods, and capital on the one hand, and control movement of humans on the other hand (Li, 2000). The global labor market brings the problem of “brain drain” to the forefront of national concern, particularly in developing countries (World Bank, 2002: 17), like China.

In the study I will analyze policies on “brain drain” and “brain gain” in China since 1978. But there is not a clear criterion to delimitate brain drain and brain gain. We can not make a judgment only depending on the number of people going out and/or

returning back, which I will try to discuss in the conclusion chapter. There are many debates about brain drain and/or brain gain going on.

The international migration of the highly skilled often referred to as the “brain drain”. Conventionally, the term “brain drain” refers to skilled professionals who leave their native lands in order to seek more promising opportunities elsewhere (Zhang, 2001).

Within the last decade an increasing amount of attention has focused on the relationship between internationalization and globalization, brain drain, and economic growth. Since education has often been cited as a major determinant of long-term economic growth, conventional wisdom has typically argued that the international migration of people endowed with a high level of human capital—the so-called “brain drain”—is detrimental for the country of emigration (Adams, 2003:1).

Adams’ view was widely recognized until recently. Typical of this view is the following citation from a classical textbook in development economics: “the irony of international migration today is that ... many of the people who migrate legally from poor to richer lands are the very ones that Third World countries can least afford to lose: the highly educated and skilled. Since the great majority of these migrants move on a permanent basis, this perverse brain drain not only represents a loss of valuable human resources but could prove to be a serious constraint on the future economics progress of Third World nations” (Todaro, 1996: 119).

In the context of China, brain drain is an inevitable consequence of China’s internationalization; Brain drain is a natural and inevitable phase of global development; and the gains were accompanied by losses or fears of losses (Du, 1992: 101).

## **2.2 Conceptual issues about policy making**

Internationalization and globalization triggered “brain drain” in many developing countries. In order to handling with this problem appropriately, the government promulgated policies to regulate and constrain people and higher education institutions at the national level. To understand these policies in the context of China, it is necessary to have the comprehension of the whole policy making process and the circumstance under which policies were made.

### **2.2.1 Policy analysis**

Policy analysis has neither a uniform understanding nor a recipe approach (Cai, 2002: 16). However, one can find some guidance. In this study, policy analyse can be interpreted as “an applied social science discipline...to produce and transform policy-relevant information that may be utilized...to resolve policy problems” (Dunn, 1981: 35).

In China, public policy analysis has been developed since mid-1990s. Yuan (2000), as one of a few pioneers in the field of educational policy studies, sees ‘policy analysis’ as ‘studies for policy’ characterized by applied discipline. He also defines policy analysis as a process, in which (a) different policy plans/options are systematically investigated and researched; (b) the advantages and disadvantages of each plan are evaluated; (c) the potential causes and effects of each option are explained and predicted. He conceives that both policy analysts and policy makers are involved in a policy-making process, but play different roles: the former provides knowledge and normative basis, while the latter puts plans into action.



In the Chinese context, both policy analysts and policy makers in general should be officially assigned. Policy analysis, as an integral part of policy-making process, deals with the policy issues before a policy is promulgated.

Policy analysis involves more than a narrow concern simply with a policy document or text (Taylor, Rizvi, Lingard & Henry, 1997: 44). In fact, policy had a broad connotation and concerns many issues. In the study I present here, the policy context, namely the triangle of coordination and the steering model; and policy making in China are the subjects.

### **2.2.2 Theoretical concepts on higher education policy making**

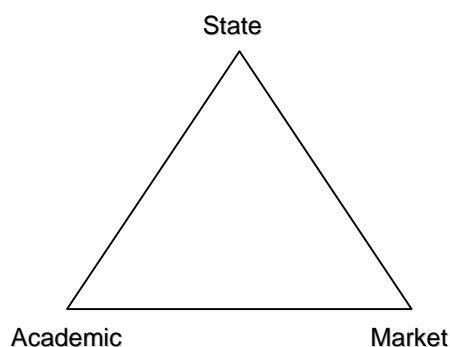
The topic of the thesis—brain drain and its relevant issue studying abroad and brain gain happened/happens mainly in the Chinese higher education institutions. Therefore, the role of the government and internal and external forces play a central role in the process of higher education policy making in terms of policies on overseas studying.

#### ***The triangle of coordination***

As Goedegebuure (et al, 1993) elaborates: “it is widely acknowledged that the coordination mechanisms in higher education are the result of the interplay between various forces, interests and actors. The concept of several forces pushing and pulling the system, through mutual interaction, is central to the analysis and understanding of the coordination mechanisms that operate with higher education systems. The typology of these forces, as developed by Clark (1993) can be summarized as follows. He distinguishes between the state authority, the market, and the academic oligarchy as the forces that determine, through their interaction, the way in which a higher education system is coordinated. The three forces combined represent a model

called—the triangle of coordination (see Figure 1). In the Chinese context, this model can be interpreted differently in unlike periods.

**Figure 1 The Triangle of Coordination**



**Source: Clark (1983: 143)**

### ***Steering models***

Since brain drain mainly happened/happens among scholars and students in the institutions of higher education, it is of great importance to pay attention to the role of government regulation in higher education policy making. According to van Vught (1989, referred in Wang's thesis), government regulation can be defined as: “the efforts of government to steer the decisions and actions of specific societal actors according to the objectives the government has set and by using instruments the government has as its disposal”. According to Olsen (1988), there are four state (or steering) models.

### *1) The sovereign, rationality-bounded state model*

This model is closely associated with the model of state control, in which higher education is seen as an instrument for reaching economic, political or social goals. That role is best upheld by tight control over universities and colleges and a strong emphasis on them being accountable to political authorities. The role of higher education is to implement whatever political objectives are on the higher education policy agenda.

### *2) The institutional steering model*

In an institutional model higher education institutions have a special responsibility to protect academic values and traditions against the whims of shifting political regimes and the shifts in coalitions and short term interests of interest groups. In the field of higher education this model is probably best exemplified through reference to the relationship between the state and the old elite universities, where there are a shared understanding and unwritten conventions of state non-interference between state civil service and universities as elite institutions (Salter & Tapper, 1994). The role of higher education is to uphold its traditions, to defend and support academic freedom, to store and transmit knowledge, to secure future independent pursuit and transfer of knowledge, to act as a carrier of culture, and to uphold and protect its special institutional sphere.

### *3) The corporate-pluralist steering model*

This model challenges the view that the state is a unitary actor with monopoly over power and control. Rather it assumes that there are several competing and legitimate centres of authority and control with respect of higher education. The role of higher education reflects the constellation of interests voiced by different organised interest groups in the sector, such as student unions, staff unions, professional associations, industry or regional authorities. A Ministry of

Education is just one of the many stakeholders in higher education. All stakeholders have a claim on the role and direction of higher education.

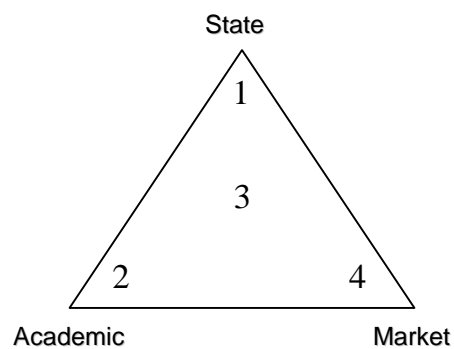
#### *4) The supermarket steering model*

In this model the role of the state is minimal. In its crude form it assumes that practically all state actions and activities by public bodies will be less efficient, effective or just, than the activities of private individuals relating through the market (Miller & Edwards, 1995). The role of higher education institutions is to deliver services such as teaching. The role of the state is like the “bookkeeper of the great necessities” to make sure that market mechanisms in higher education run smoothly. There is an extreme decentralization in the sense that decisions are individualized.

These four steering models can be illustrated in the triangle of coordination as shown in Figure 2. These two concepts are indeed connected. Clark's triangle of coordination sheds light on the importance of three major stakeholders and the extent in which one of them has more power with regards to HE governance than the others. It is difficult to see any country or system with a pure 'market' or 'oligarchy' orientation, and what can be observed is a combination of approaches which Gornitzka & Maassen (2000) called 'hybrid' approach of HE governance.

With regards to Olsen, he developed his model in the mid 1980s looking at the role of the state within the Scandinavian region. This is most used in political science and he did not have HE into consideration. However, the model is useful since it presents a 'typology' (i.e. types of state behaviors) with regards to public governance. When we look at Olsen's model you can see that there is a strong parallel with Clark's triangle as he presents different situations where the government either acts as 'sovereign' (i.e. state control); 'protecting of institutional interests' (i.e. academic oligarchy), 'stakeholder' (i.e. a variety of actors - this is the most common in Scandinavia and other democratic-centric countries) and/or 'supermarket' (i.e. the state uses market mechanisms to govern HE).

**Figure 2 The Relationship between the Triangle of Coordination and Steering Models**



- Notes: 1. The sovereign, rationality-bounded state model  
2. The institutional steering model  
3. The corporate-pluralist steering model  
4. The supermarket steering model

The switch towards a more self-regulation and institutional autonomy raises the question to what extent the power balance between higher education and government has been changed. In the context of the present study which has studying abroad as a starting point, it is of great importance to understand why and how the steering model in China is changing with respect to higher education issues. This process is developing from close to open, from open to restrain, and from restraints to widely open. Thus, Chinese higher education institutions and individuals have the autonomy

to make their own decisions on the matter of studying abroad. In this way, both brain drain and brain gain are possible to happen to China.

China is a very special country. No matter how open the door is, the Chinese government will always have the control over higher education institutions, but maybe in another way. Just like Miyoshi (1998: 262) states: “from Fichte and von Humboldt, through Newman and Arnald or even Thorstein Veblen, the universities was thought of as a part of national culture, national history, national identity, and national governance. The construction and maintenance of the coherent nation-state was at the core of its agenda.”

However, the higher education policy making will be heavily affected by globalisation and internationalization. Therefore, regarding to policies in the international dimension in higher education, van Vught, van der Wende and Westerheijden (2002:103) writes that it has been acknowledged that government policies need to address the internationalization of higher education directly, and should aim to move beyond existing schemes for academic mobility towards policies which encourage higher education institutions to internationalize their core functions. The awareness has grown that policy initiatives are also needed at an international level.

Giddens (2000, referred in van der Wende 2002) addresses that the development and strengthening of linkages between nation states is emphasized, but the prospect of a world state is not seen as a viable proposition. According to this perspective, globalization can be seen as a reflection of changes that have occurred in the way nation states are governed (Clark, 1999). The shifting of steering models in many countries shows the impact they get under internationalization and globalization. The changing role of the nation state in relation to trends is moving towards deregulation, liberalization and privatization (van der Wende, 2002: 40).

## 2.3 Push and pull factors

In the last two sections, regarding the issue of brain drain in China I have discussed the impact of internationalization and globalization and steering models under which policy making process happens from the national perspectives. However, the factors that triggered brain drain are not only from the policies which are consistent with international and global trend, but also from individual understandings and decisions on the issue of studying abroad. Therefore, this section provides “push and pull” factors as a way of including an individual perspective and broadening our understanding of the development of policy. In addition, using “push and pull” factors is a way to incorporate internationalization and globalization in the analysis of the national context.

The known factors influencing international students’ choices of education can be classified by looking at their interplay in terms of home versus host countries (Pimpa, 2003:3). Mazzarol and Soutar (2002: 82) suggested the global pattern of international student flows may be explained by a combination of ‘push and pull’ factors. On one hand, “push” factors operate within the source country and initiate the student’s decision to undertake international study; on the other hand, “pull” factors operate within a host country to make that country relatively attractive to international students. Some of these factors are inherent in the source country, some in the host country and others in the students themselves.

McMahon (1992) examined the flow of international students from 18 developing countries to developed countries during the 1960s and 1970s, testing an outbound or “push” model and an inbound or “pull” model. The push model suggested the student flow was dependent on the level of economic wealth, the degree of involvement of the developing country in the world economy, the priority placed on education by the government of the developing country and the availability of educational

opportunities in the home country. His pull model suggested student attraction to a host country was influenced by the relative sizes of the student's home country economy compared to the host country, economic links between the home and host country, host nation political interests in the home country through foreign assistance or cultural links and host nations support for international students via scholarships or other assistance.

In the 21<sup>st</sup> century marketplace, the richer countries strive to attract and retain the world's best-trained minds in many ways. Among the more powerful pull factors are effective policies that stimulate R&D activities and increase direct investment, offer attractive postgraduate training and research opportunities, and recruit younger graduates and professionals (Glanz, 2001). The complex and shifting interplay of pull and push factors motivates individuals to enter or leave a country (World Bank, 2002: 18). Just like the push and pull factors in the Chinese context interplay and shift roles in different periods of time. For example, the external force pulling people in host country in the 1970s and 1980s becomes the factor pushing them back to China.



## **3. China's "brain drain"**

### **3.1 General development in China**

#### **3.1.1 Modernization and economic development**

After the ten years so-called Cultural Revolution from 1966-1976, the Chinese came to realize that the old model of development, i.e. the Soviet Model adopted in the 1950s didn't work for China. The Third Plenum of the Eleventh Central Committee of the Communist Party, held in December 1978, is now widely regarded as the turning point in favor of Deng Xiaoping's pragmatic policies for China's internal development and the maintenance of an open door to the advanced capitalist world externally. The objectives set for the economic development under the umbrella term of the Four Modernization consisted of quadrupling the total 1980 industrial and agricultural output value by the end of the 20<sup>th</sup> century and of approaching the economic level of developed countries by the middle of the 21<sup>st</sup> century (Hu, 1982; Zhao, 1987).

Four modernizations stood first and foremost for a conception of economic reform that was to increase production and improve distribution and was guided by more rational models of planning than had previously been relied on (Henze, 1992: 103). He further states: whether it was later called "socialist modernization" (shehui zhuyi de xiandaihua) or "modernization with Chinese characteristics" (Zhongguo tese de xiandaihua), to quote Deng Xiaoping (1984: 225), "the four modernization mean economic construction". Deng equated "modernization" with "development" generally and "economic development" particularly.

From the very beginning, the political elite assumed that “modernization” would lead to material wealth, to a happier life for most of the population, and thus to a “strong socialist China”. Therefore, in the process of policy formation, the concept of modernization has generally been accepted as a “multifaceted process involving changes in all areas of human thought and activity”. Although many divergent opinions had been offered on how to achieve modernization, throughout the 1980s came a general agreement on the necessity of modernization, namely, to mold China more in the shape of the economically advanced countries.

In October 1984, the CCP promulgated “The Decision on Economic System Reform”, which was a comprehensive economic reform with a focus on urban areas. The reform commenced throughout the country in the following years covering industry, trade, transportation, the tax system, and the personnel system. Since then, China started to implement new state policies of economic reform and opening up to the outside world, aimed at speeding up economic development, which initiated to the process of transition from the comparatively-backward and centrally-planned economy to a market economy. The highly centralized planning and control began to be replaced by more local, enterprise initiatives and a certain degree of market regulation (Cheng, 1998).

### **3.1.2 Political development**

The political development and economic development complement each other. Under girding the economic reform there also emerged the political restructuring as a gradual and cumulative process, with which “the CCP relaxed its repressive controls and abandoned a revolutionary and mobilized style of leadership for a more *laissez-faire* posture” (Falkenheim, 1989: 4). It was true that all the time the Four Cardinal

Principles<sup>3</sup> continued to be exhorted, but the political climate had been so relaxed and liberalized and the nation was so engrossed in the economic programs since 1980 that these general and elusive political exhortations were more or less reduced to mere rhetoric, evoking little more than lip service (MOE, 1999). Thus, the political environment is stable and the political development provides a reliable guarantee for the development in economy.

### **3.1.3 Educational development**

The political leaders believe that rapid economic development will bring about modernization in China. Some intellectuals, like Meng (1989), think that the main reason for underdevelopment in Chinese society and the economy is the poor “quality” of the people. Moreover, he argues that education is underdeveloped mainly because (1) the state ownership system has never really been fully implemented since state property is used by people in power, and (2) because of extreme centralization. Therefore, it’s very necessary and urgent to carry out educational reforms.

Obviously, education is seen as an instrument used by political leaders to achieve desired social and economic change (World Bank, 1980). Thus, China adopted “open door policy” since 1978. Educational implications were great, particularly the role of Chinese universities in the process. They set the tone for the whole educational system and provide the main channel for the inflow of new knowledge from other parts of the world (Hayhoe, 1989: 3). As a knowledge system, higher education institutions responded to the massive flow of knowledge coming into China. At the same time scholars and students began to have communications and exchanges with

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<sup>3</sup> The Four Cardinal Principles were enunciated by Deng Xiaoping in 1979. They are upholding the socialist path, upholding the people’s democratic dictatorship, upholding the leadership of the Communist Party of China, and upholding Marxism-Leninism-Mao Zedong thought.

foreign countries in the global world, which was both great opportunity and challenge for the development of China and its higher education institutions. In the following part of this chapter I will analyze policies on how the Chinese government tried to make good use of this opportunity and how it coped with the challenge, namely brain drain.

### **3.1.4 The issue of studying abroad**

When China cut itself off from the outside world during the Cultural Revolution, virtually no students went abroad to study. In the beginning in the mid-1970s, when the country committed itself to the “four modernizations” and reopened the universities, students began studying abroad in unprecedented numbers (Altbach, 1998:140). As Zweig (2002: 1) analyzed, after 1978 and Deng Xiaoping’s opening to the outside world, global exchanges became a key growth in the Chinese economy. Universities, the battleground for reactionary and revolutionary ideologies, turned into conduits for technological, managerial, and personal exchanges. China’s internationalization was under way. New ideas and funds flooded in; intellectuals flooded out. Encouraging people to study abroad is an important component part of internationalizing China. Studying overseas has already become an important channel for international communication in fields of culture, economy, science and technology, and education. Simultaneously, it is an important way and channel for China to train, exploit and attract personnel.

After decades of isolation from the West, the People’s Republic of China gradually reestablished scholarly exchanges with the West under its open policy in education (Lampton, ed., 1986). More and more scholars visited foreign educational institutions in developed countries, like the United States and Japan. In addition, a few students got the chance to study abroad as exchange students. By the late 1980s, more than

25,000 students<sup>4</sup> from China were studying in the United States, with perhaps an equal number enrolled in all other countries (Hayhoe, 1989). A significant number of Chinese students had not returned home after completing their degrees. Before 1983, both visiting scholars and exchange students who went abroad were approved and funded by the Ministry of Education (MOE) in China.

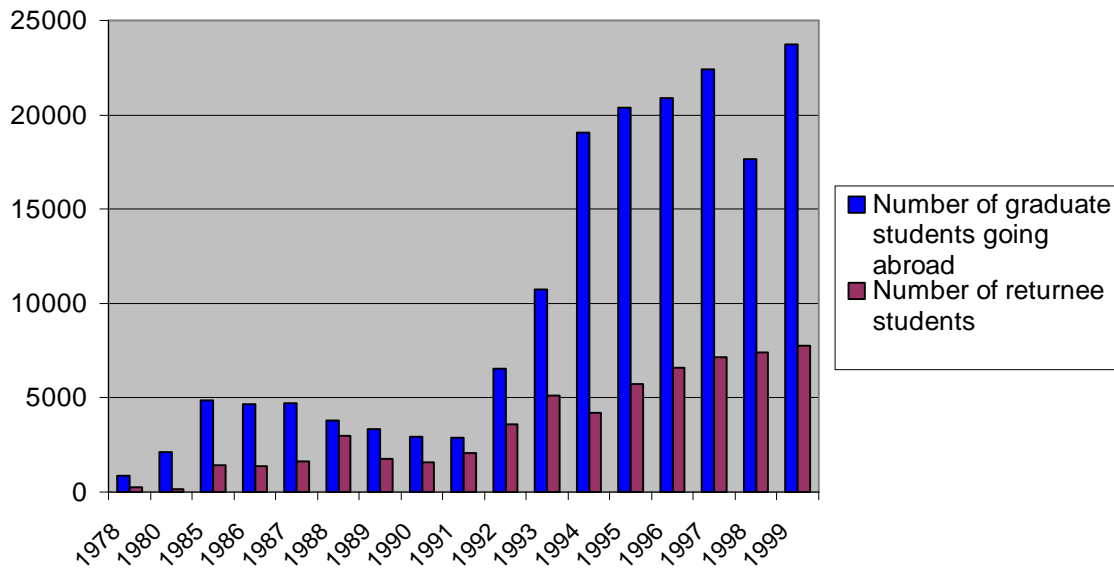
However, in 1980s pressures began building to allow people who could pay their own way to go abroad. In December 1984 State Council Regulations on ‘People Who Study Abroad at Their Own Expense’ was issued. Thus, people were allowed to study overseas privately and the number of students who study abroad at their own expenses increased dramatically since 1985 (see Figure 3). Till 1988, the number of Chinese who studied abroad at their own expense was almost equal with those who were funded publicly.

After 1988, studying abroad as short- and long-term visiting scholars and exchange teachers and students who are approved and sponsored by the government is still a dominant way of outflowing China’s brains. Policies are becoming more flexible and higher education institutions get more autonomy. From 1989 till now, self-paying students are inclined to be the main group who can go abroad to study under the permission of Security Bureau instead of having approved by working units and the government. In addition, younger generation goes overseas to study even when they are in high school. The age of studying abroad is getting younger and younger. By 1999, the number of graduate students who have studied abroad reached 173,209, while the return rate was 12.4% (National Bureau of Statistics, 2000). The phenomenon of brain drain in China emerged and became serious gradually.

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<sup>4</sup> This number includes all types of students studying abroad.

**Figure 3 Number of graduate students studying abroad and number of returnee students, 1978-1999**



**Source: National Bureau of Statistics, China Statistical Yearbook (2000)**

In this chapter I shall focus on push and pull factors which made it possible for more and more Chinese people going abroad to study. On one hand, “push” factors operate within China and initiate the people’s decision to undertake international study; on the other hand, “pull” factors operate with western developed countries to make those countries relatively attractive to international students. Both China and developed countries have a series of policies on the issue of people studying abroad. These policies in China and in developed countries are full of tensions. In other words, these policies show how the phenomenon “brain drain” developed till today in China.

## **3.2 Push factors**

In this section of push factors, I will firstly give a series of reasons why people choose to study overseas from individual perspectives, and then I will analyze policies in China on the issue of studying abroad.

### **3.2.1 Reasons for studying abroad from individual perspectives**

There are several reasons that “push” people out of China: the family concern, economic concerns, political concerns, underdeveloped educational system and desires for personal advancement. In the more opened 1990s and 21<sup>st</sup> century, some reasons highlight the aspects in educational quality, personal development and values, and self-fulfillment.

#### ***Family ties***

China, which is influenced by Confucian, is a conservative nation where filial love remains an important value. Many parents see having children overseas as a status symbol and as a way for other members of the family to go out. For these families, getting a child overseas may be part of a family strategy of diversifying risk—families may decide that it is best to have one child in North America and one in China—or it may be the first step to having the family emigrate out of China (Zweig & Chen, 1995: 46). The reason for those parents holding these views is that the betrayal experienced by the generation of intellectuals who returned in the 1950s and who suffered during the Cultural Revolution. These parents, who were high-ranking professors, strongly objected their children’s returning because they didn’t want children to follow in their footsteps. Moreover, people abroad bought goods and sent their foreign income to families in China, which was a weighty financial support.

However, parental views had almost no effect at all on most people's decisions about returning. Conversely, whether or not the spouse had joined the student or the scholar in a foreign developed country had a major effect on people's views about returning. For some students and scholars, their children's schooling and education might affect their views about returning.

Another reason is from Chinese culture, namely the "face problem". Some people were not returning because they felt great pressures from their families and friends to have a decent job and high social status, and eventually get permanent residence status or shift nationality. For example, there exists a very popular idea among students and scholars in the United States, which says: "You get a degree for yourself, but you get the green card for others—for your relatives, parents, children and friends" (Zweig & Chen, 1995: 49).

### ***Personal development***

As Zweig and Chen (1995: 50-51) states, personal development comprises many factors, including the ability to choose career paths or research topics, to gain access to advanced research facilities, and to maximize one's social status. However, the work environment was not satisfying and the job mobility was limited. The government and work units constrained on job and life choices or areas of specialization in traditional and hierarchical society in China, which pushed people out. Given the highly authoritarian nature of Chinese society, the motivations should be important to the many young Chinese who uprooted themselves and moved abroad to improve their lives.

Many returnees apparently felt that their skills were being poorly used in China (Zweig, 2002: 169). Zweig further demonstrates, rather than create an intellectual labor market; the government readjusted the job-assignment system which was still inflexible. Namely the lack of flexible and competitive labor market and appropriate



jobs in China pushed people out. Domestically the limits on funding for education pushed Chinese scholars to seek international collaboration, which provided channels for them to go abroad. Even when they were abroad, the consistent under-funding of officially sponsored Chinese students was forcing them to seek financial assistance elsewhere. However, the growth of foreign funds expanded in China, which led to the outflow of human talent.

Moreover, interest in studying abroad ballooned (Zweig, 2002: 169). One reason was that promotions based on academic contributions made overseas study a critical career step. At that time, it was easier to enter graduate programs overseas than in China because of the enormous and intense competition. Thus, it's of great importance to train and experience overseas for a period of time and get oneself painted on a little gold during an individual's academic training. If one returned back, he/she had high value; if one didn't return back, foreign degrees were prerequisite for staying abroad.

### ***Economic concerns***

International economic forces pushed people out of China. Economics could be the driving forces behind many people's decisions about not returning to China. As people compared their current or anticipated economic situation in developed countries to their potential situation in China, they would decide that the economic gap was too great and so would opt to stay (Zweig & Chen, 1995: 53). Academic salaries were extremely low, and there was no opportunity for generating private income and improving standards of living. The difference in pay between academics in China and academics overseas was enormous.

### ***Political concerns***

Political factors, such as freedom, stability, and political culture, may also be important. According to El-Saati (1980: 49-64), the existence of specific criteria for

evaluating performance and achievement, which decrease the importance of personal ties in affecting promotion, makes the West more attractive to people from the more traditional states who lack such connections. Based on multivariate analysis of a model testing the impact of various economic, professional, and political variables upon foreign students' decisions to remain in the United States, Huang (1988) found a significant correlation between a nation's lack of political freedom and its citizens' desire to stay in the United States. These findings prompted him to assert that "a significant proportion of non-returning students (in the United States) from some Asian and Middle Eastern countries are virtual political refugees in the sense that their stay was motivated more by the intolerability of their home country's political situation and less by professional considerations".

Except the low level of economic development and poor living conditions in China, the political environment was not stable. The Cultural Revolution from 1966-1976 and the Tiananmen Square incident in 1989 made people feel that they lack of political freedom and they were unsafe. During the Cultural Revolution, many intellectuals were not only verbally attacked but also physically abused, eventually died. In this kind of situation, it's difficult for academics to believe that they could contribute themselves totally into the construction of the country without being hurt.

Chinese people fear political instability very much. When Zweig discussed this point, he suggested that we must question those who assert that political change is a prerequisite for bringing people home, as the transition from an authoritarian regime to a democratic one is likely to trigger a level of instability that will keep most people away (Zweig and Chen, 1995: 6). Zweig would assert that if a stable democracy could be established, more people might return; and he also believes that the current authoritarian strategy may breed its own pattern of instability.

The political situation in China is still lacking of stability. Since 1978, the steering model in China has changed a lot, from the tight state control model to the institutional steering model, and to the supermarket steering model. Market economy in the regime of Chinese Communist Party has brought people better live, while it has brought potential instability as well.

### ***Underdeveloped educational system***

According to Zhang (2001), from the supply angle, the domestic school facilities at the higher education level are obviously insufficient. Based on the rate of school enrolment at each level, the estimated probability of receiving higher education in China in the 1990s varies from 0.08 to 0.30 (China Education and Research Networks). Although the probability has been increasing rapidly, it is still unlikely for most Chinese youths to enroll in higher education institutions.

Moreover, many parents and students are not satisfied with the current education system in China. They assume that quality is better in advanced higher education systems in the developed countries. Having the access to famous universities overseas is one of reasons why high school students are sent abroad to study (Dajiyuan, 2004). And in China there are some courses unavailable for students who want to learn. Moreover, the university entrance examinations make students feel frustrated and stressed. So, when students have bad scores which can not ensure them to recruit in Chinese universities, going abroad to study becomes a popular and reasonable alternative for those having rich family. These are the main push factors which make people, especially young people seek to study abroad. They hope they can pursue their academic goals and new career opportunities.

The relative poverty of China's educational system (Gu, 1989: 40-46), low faculty wages, collapsing infrastructure, and backward educational and resource skills created enormous differences between the relative values of goods and services and

the potential return to human capital on either side of the border. Within universities, department heads wielded enormous power, while faculty, lacking job mobility, had little negotiating leverage. Moreover, the most advanced researches were going on in the developed countries, which attracted Chinese scholars.

For scholars and university staff, according to Altbach (2004:14), among the many “push” factors, the limited extent of academic freedom in many developing countries means that academics are sometimes subject to restrictions and even arrest if they stray from officially approved themes. Favoritism or even corruption in academic appointments, promotions and other areas further erode the environment of the university. Job security or stability is unattainable.

In some ways, conditions at Third World universities stem inevitably from the scarcity of resources and the pressure of increased student numbers on overburdened academic institutions and systems.

### ***Cultural reasons***

The desire for economic betterment is always a factor that pushes people out, especially those from rural regions. But it’s not primarily concerned in the new young generation. Instead, students are more concerned with gaining self-fulfillment and seeking independence that they cannot achieve in China.

One study by Brzezinski (1994), which employed in-depth interviews, tapped deeply into the goals and desires of six Chinese male students in the United States. The main contribution of this study was to stress the importance of personal values, such as the search of prestige, honor, respect, fairness and, though not directly addressed by the study, the importance of self-realization, as key factors motivating young Chinese to go to university, go overseas to study, and then seriously to contemplate not returning to China. In his open-ended interviews, Brzezinski also found that the students never

referred to politics as a reason to stay, though they did speak at length about the problems of the work unit system, which they said bred jealousy rather than healthy competition.

Moreover, students regard studying abroad as a great opportunity to experience life and to develop capabilities which are not focused in the Chinese education system. Because of the higher and higher tuition fees and the disappointing undergraduate job market, younger students wish to improve their qualifications, including their mastery of English, to supplement their education. In the 21st century students from China who study abroad typically do not only earn a degree but rather spend several years in the country to broaden their horizons, learn a language or gain knowledge that they could not acquire at home.

### **3.2.2 China's policies**

In the macro level, the Chinese government had very strong intention and need to internationalize China in the 1980s in order to speed up the economic development. Since 1978, China has shifted from an autarkic relationship with the international system, characterized by low levels of trade, scientific exchanges, foreign investment, tourism, and shipping, to become a state that, for a large country, is quite engaged in global commerce and quite active in transnational exchanges of all sorts. Yet this transition has been gradual, with the state maintaining regulatory controls to monitor the changes. New linkage channels of global transaction, such as joint venture, export-processing zones, educational exchanges, foreign affair offices, and a variety of counterpart agencies (*duikou danwei*) established to control foreign donors have emerged in most sectors (Zweig, 2002: 2-3). Through these channels have passed a rapidly expanding quantity of goods, service, capital, and people. The rewards from internationalization in higher education were also reaped by individual scholars and students whose feverish desire to go abroad propelled the process of

internationalization (Zweig, 2002:21). China's universities and the science and technology sector became one of the most internationalized arenas in Chinese society. Academic and scientific exchanges and overseas education became the channel through which China's intellectuals and educational administrators could sojourn overseas, and the enormous demand for such opportunities has triggered a brain drain that rivaled most developing countries (Zweig & Chen, 1995; Orleans, 1991).

Generally speaking, China's policies on the issue of brain drain could be characterized as follows: the central government strongly encouraged scholars and students to study abroad in order to speed up the internationalization, while bureaucratic constraints remained a powerful influence on the nature of transnational exchanges. From 1990s, the central government missed almost all the power to control scholars and students studying abroad when China engaged itself faster and deeper in the more globalised world.

### ***Encouragement and support***

Deng Xiaoping initiated the opening soon after returning in 1977. Internationalization of China's education and science and technology systems began in spring 1978 when Deng Xiaoping, concerned about the scientific gap between China and the world, affirmed the importance of learning from other countries in transforming China "into a powerful socialist country" at the National Conference on Education in 1978 (Zweig, 2002: 165). On June 23, 1978, Deng stressed the importance of increasing the number of overseas students, particularly in the natural science, called on the MOE to set up a special group to manage overseas study, and criticized the previous policy on overseas students as "too inflexible". And even as he stressed the importance of China's own creativity, independence, and self reliance—after all, many bureaucrats and officials feared relying on the outside world—he remarked that "independence does not mean shutting the door on the world, nor does self-reliance mean blind opposition to everything foreign" (Jiao, 1998: 6-8). Deng's opinions

shared the common concern with prominent Chinese scientists, both at home and overseas, who encouraged government leaders to train students abroad. Thus, argues Shiqi Huang (1987: 227-228), “Deng Xiaoping’s personnel intervention in policy matters concerning education and science in 1977 (and 1978) were of crucial importance in the shaping of later policies. Deng began to create a positive environment for the concrete policies that would follow, including the decision to send students abroad to study subjects other than languages, the signing of major educational and scientific exchanges with the United States and other developed countries, and the establishment of many sister-school relationships (Zweig, 2002: 167).

In December 1979, Fang Yi, the reformers’ leading spokesman on science and technology, convened the First National Work Conference on Study Abroad, which announced that overseas study was not a short-term policy but one that must be followed “for a long time to come”. Moreover, instead of sending only mid-career scholars, graduate students could also go abroad (Englesberg, 1995:102). Furthermore, in 1980 pressures began building to allow people who could pay their own way to go abroad. In December 1984 State Council Regulations on ‘People Who Study Abroad at Their Own Expense’ was issued. Thus, self-paying students no longer needed MOE permission to leave, only the approval of their local Public Security Bureau (Englesberg, 1995:109). Accordingly, the number of graduate students who went abroad to study increased till 4,888 in 1985 (see Figure 3). However, letting individuals go overseas on private exchanges dramatically increased the outflow as well as increasing the percentage of nonreturnees. More than any other group, self-paying students did not return.

The number of scholars and students going abroad increased, at the same time, new organizations emerged to manage the flow. In May 1981, the MOE created its own China International Examinations Coordination Bureau (CIECB) to administer the

Graduate Record Exam (GRE) and the Test of English as a Foreign Language (TOEFL) (China Exchange News, 1981: 13). This was a fairly positive way of supporting people go abroad to study. Nevertheless, the CIECB also administered pretests to screen students nominated by institutes and universities, creating another layer of bureaucratic control.

In the process of internationalization in higher education institutions, the 1985 reforms left universities scrambling for funds. Allocations from the central government covered only two-thirds of the operating expenses of most key universities (Johnson, 1989: 3-7). Universities had to seek a variety of supplements to support their often meager grants from the SEDC. Therefore, researches began to be commercialized and contracts from the state and enterprises became the important means of gaining research funds.

### ***Constrains-maintaining administrative controls over transnational channels***

However, encouraging study overseas led to problems. In November 1984, at the Second National Conference on Study Abroad, concerns were raised about how China could best use the fourteen thousand students and scholars who had already returned and about the emerging problem of the brain drain (Orleans, 1988:26). So, in December 1987 Deng insisted that fewer students go to the United States in his speech which became Central Document No.11 (1987) and SEDC Document No.749 (Zweig, 2002: 172). Thus, educational exchanges were severely restricted. Even the allocation of foreign teachers and advisors, a key resource, and foreign aid to the education sector remained under tight administrative control.

In addition, document 107 restricted visits by students' spouses, and it stated that government-funded students in the United States had only five years to complete their degree and would be required to sign a contract that subjected them and their families



to fines if they did not return (Harvest, 1988:5). However, Chinese authority's new barriers didn't stop those wanting to go abroad.

In 1988, the SEDC forced university lecturers to shift from private to public passports, making them eligible for the more restrictive J-1 visas, rather than the highly flexible F-1 visas (Zweig, 2002: 173).

However, June 4 complicated the issue as self-funded applications jumped, the number of people taking the TOEFL rose from 36,000 in 1989 to 60,000 in 1990, and the number of government-funded students staying abroad was deemed to be a serious problem (Jiao, 1998). The response was a wide array of new controls. Older scholars were favored over young students, more visiting scholars were funded for short-term sojourns, fewer degree candidates were permitted to study abroad and only those in fields where China's own training capabilities were weak (Zweig, 2002: 174-175). Furthermore, new graduates had to work for five years before going abroad. Therefore, the number of graduate students studying abroad decreased during 1989-1992 (see Figure 3).

### **3.3 Pull factors**

In this section, on pull factors, I will firstly describe the pull factors which attract Chinese to study in developed countries, and then analyze policies from developed countries on the issue of studying abroad.

### **3.3.1 What are attractive in the developed countries?**

#### ***Better economic and political environment abroad***

Strong factors pulled Chinese students and scholars to stay in developed countries: better facilities, higher salaries, a more intellectual atmosphere, more political freedom, and more academic freedom.

Moreover, working overseas brought easier access to valuable commodities and a better life for many who chose not to return. For example, in China it's pretty common to have four generations living together in a 40 square meters apartment. According to Zweig and Chen's study (1995:57), for people with children, better housing is a strong pull.

In the developed western countries, democracy represents their politics. They advocate everyone is equal and full of rights, which attracts Chinese students and scholars, especially those who experienced crude torture in China. They need a stable and safe political environment that can protect their human rights and ensure their normal work and life.

#### ***Better academic development***

Better salaries and working conditions and the opportunity to be at the centers of world science and scholarship.

The discrepancies in salaries and conditions between North and South mean that in most developing countries, like China, academics cannot aspire to live in a middle-class lifestyle or expect to have access to the necessary tools of research and scholarship—including the ability to obtain the most current knowledge and to connect with the international community of scholars.

According to Altbach (2004: 7), the powerful universities have always dominated the production and distribution of knowledge. The centers of world science and scholarship tend to be located in larger and wealthier countries and benefit from the full array of resources—including funding and infrastructure such as libraries and laboratories for research, academic staff with appropriate qualifications, traditions and legislation in support of academic freedom, and an orientation toward high achievement levels on the part of individual professors and students and by institutions themselves.

### **3.3.2 Developed countries' policies**

#### ***International support***

China gave extremely positive external responses from foreign governments and multilateral agencies facilitated many bilateral and multilateral exchanges and educational opportunities and received remarkably strong support for its overseas study program from all the developed countries. Academic exchanges brought western technology, innovative scientific methodologies, and new teaching materials into China. Multilateral donors such as the World Bank, numerous bilateral aid agencies such as the Canadian International Development Agency, and the overseas Chinese have poured millions of dollars into China's universities and colleges to improve their intellectual and physical facilities (HayHoe, 1989).

In spite of criticism of World Bank paper in 1980, there can be little doubt that World Bank lending is intended to support an increasing interdependence between the developing and the developed world. In the case of China, the choice of join the International Monetary Fund and take up a seat in the World Bank in 1979 was made by political leaders who had seen the economic limitations of an isolationist development decade during the Cultural Revolution and were prepared to face the political and cultural risks of initiating a greater interdependence with OECD

countries (Feeney, 1984). Up until the mid-1980s, the focus of World Bank support was on higher education, by Chinese choice, and 183 higher institutions, nearly one-fifth of China's total, had received assistance (Hayhoe, 1989: 157). By 1986 eight projects in higher education and research were already underway, and another three were under discussion (Ibid: 161). Foreign aid, in particular the 1983 World Bank education loan valued at \$805 million, helped many universities buy technical equipment and train people abroad (Zweig, 2002: 184).

### ***Educational cooperation and agreements with six nations***

Hayhoe (1989: 101-133) specifically explored many educational cooperation and agreements in almost every field between China and six nations (Japan, France, West Germany, Britain, the United States and Canada).

Well-developed political-economic relations provide the context for cultural and educational relations between Japan and China. The Agreement on Cultural Exchanges was first signed in 1979, in September of the same year a Memorandum of Understanding on Science Exchange was signed between the Japan Society for the Promotion of Science (JSPS) and the Chinese Academy of Science (CAS), an agreement on academic exchange in the social science and humanity between JSPS and CASS, also a parallel one with the Chinese Ministry of Education in November 1982 (Abe, 1985). The increasing provision for technically oriented work-experience programs indicates a response to the explicit Chinese policy of sending technicians abroad.

French and Chinese governments agreed to expend their cooperation in almost every field. In addition, under two loan agreements the French government undertook to provide China with development loans and loans for microwave and telephone exchange projects (Hayhoe, 1989: 110). The French government promised scholarships for 30-35 doctoral students and financial assistance for a considerable

number of visiting scholars, totally about 100 fellowships in all. Moreover, French teachers were provided for China.

With German government signed China thirty university-level agreements, especially in science and technology.

Since 1983, the British government had made a particular effort to encourage Chinese study in Britain through the provision of 260 tuition-free places each year. By the autumn of 1985 there were about 300 Chinese scholars and students in Britain under full or partial British financial support.

The Agreement on Cooperation in Science and Technology signed by Jimmy Carter and Deng Xiaoping in July 1979 provides the basis for twenty-seven protocols of cooperation in science fields between offices on both sides (China Exchange News<sup>16</sup>, 1988). The Memorandum of understanding on the Exchange of Students and Scholars, signed in 1978, became incorporated under this agreement and was replaced by a new protocol for cooperation in educational exchange in July 1985. The main support officially given to Chinese scholars by the American government is under the Fulbright program of the United States Information Agency (USIA), which provides for about 17-25 Chinese scholars to go to the United States for research in the social science or humanities and in some cases to teach Chinese. Another unique feature of Sino-American academic relations has been the efforts made by distinguished American scientists to identify promising talented among Chinese university students in the basic sciences and arrange their entry into American Ph.D. programs in some of the best American centers. The Chinese leadership holds great hope for the contribution of this group of young scientists if and when they returned to China and the new postdoctoral centers were established particularly with this group in mind.

Parallel to the Japanese and German programs for training Chinese technicians in work-experience situations, Canada has a Human Development Program under the Canadian International Development Agency (CIDA) which aims to contribute to the upgrading of the human resources capacities of up to 367 younger Chinese in key development positions with significant human development functions, concentrating on critical areas in China's development program (Burnaby, Cumming and Belfiore, 1986:5).

The developed countries (USA on top) which gained not only direct economy but also human resources and R&D benefits from the inflow of foreign students and staff (van der Wende & Huisman, 2004: 5). Europe will not lag behind USA, UK and Canada on the matter of attracting talents and high-level labor force although it is actually lagging far behind. In EU, many universities establish specific exchange and scholarship programmes such as ERASMUS and SOCRATES, NAFTA, to mention a few. Let us take a major new EU programme 'ERASMUS Mundus' as an example.

The Erasmus Mundus program is a co-operation and mobility program in the field of higher education which promotes the European Union as a centre of excellence in learning around the world. It supports European top-quality Masters Courses and enhances the visibility and attractiveness of European higher education in third countries. It also provides EU-funded scholarships for third country nationals participating in these Masters Courses, as well as scholarships for EU-nationals studying in third countries (Europa, 2004). The program is intended to strengthen European co-operation and international links in higher education by supporting high-quality European Masters Courses, by enabling students and visiting scholars from around the world to engage in postgraduate study at European universities, as well as by encouraging the outgoing mobility of European students and scholars towards third countries. The duration of the program is five years (2004-2008) with a planned financial envelope of 230 million Euros for the whole period.

The Erasmus Mundus program is created and has been operationalised in 2004 in order to promote Europe as a center of excellence and to attract students seeking an international education (van der Wende&Huisman, 2004:9). According to the Europe webpage, one of the four concrete actions is Erasmus Mundus scholarships: in order to give the Erasmus Mundus Masters Courses selected under Action 1 a strong external projection, a scholarship scheme for third-country graduate students and scholars from the whole world is linked to them. This scholarship scheme addresses highly qualified individuals who come to Europe to follow the Erasmus Mundus Masters Courses or to work for them. This program is really a European elite course which offers a considerable sum of stipend 21,000 Euros a year (Tidemann, 2004), (which is 4-5 years salary for a middle-class Chinese) for the third country nationals. Undoubtedly it is an extreme attractive opportunity for Chinese students.

In effect, those countries have other intentions as well. For example, with respect to the Nordic countries a specific indirect economic element in internationalization policies is the growing awareness that higher education can be used to attract young people and expect them to stay after finishing their studies and contribute to the welfare in the Nordic countries where the enrolment of engineering and science is too low (Maassen & Uppström, 2004:20). However, engineering and science is of great importance for every country. For the country like China, experts in these two fields are the main ‘brains’ in the knowledge economy.

### ***Growing foreign funds***

Before 1992 most scholars and students went to the United States to study. The growth of foreign funds expanded the outflow of human talent. Although the number of Chinese students going to U.S. stagnated between 1980-1983 at approximately 4,300 a year, it jumped to 6,097 in 1984, 9,913 in 1985, and 12,711 in 1986, tripling in three years (Orleans, 1988:88). Thus, the power of foreign funds undermined China’s institutions. When the Chinese government planned to shift students away

from the United States in 1987, American universities, foundations and private individuals provide about US\$100 million a year in scholarship aid to the Chinese students, with the Chinese government paying only a fraction of this amount (Butterfield, 1988: 1). In fact, foreign universities used grants and fellowships to extract many of China's best and brightest.

### ***U.S. changed visa policies to Chinese***

Unlike its tightly controlled exchange programs with the Soviet Union, the U.S. government decided not to limit the number of Chinese and gave out as many visas as the Chinese wanted.

As I mentioned document 107 before, China restricted visits by students' spouses. However, the U.S. government softened the restrictions that limited the availability of F-2 and J-2 visas for spouses, thereby making it easier for spouses to come the United States (Zweig & Chen, 1995: 48). According to their findings, once the spouse arrives, the possibility of returning decreases significantly. So we can see that U.S. visa policies contributed greatly to the brain drain that has followed.

Moreover, when China tried to control the outflowing people overseas, President George Bush's Executive Order of April 1990 allowed all Chinese in the United States at that time to apply for permanent residence and all J-1 visa holders to shift to F-1 visas. Similar policies in Canada and Australia meant that close to 100,000 Chinese students did not return to China, leading China to accuse the world of stealing Chinese brains (Zweig, 2002: 175).

### ***Immigration regulations***

Except from the good offer of programs to the Chinese students and staff, those developed countries make special immigration regulations for the Chinese talents. Last year in a press held in Beijing, the former minister of foreign affairs in the



United States Powell said: “Now USA simplifies and reduces the formalities of applying student visa to America after ‘9.11’ accident and hopes the amount of overseas Chinese students will increase rapidly” (Jia, 2004).

In Great Britain and Canada there are same kinds of regulations issued. Probably the new policies will be carried out in China in 2005 (Sina.com.cn<sup>1</sup>, 2004). The British government will increase the degree in which the scientific fields are supported by issuing preferential visa policies to Chinese who might apply to all subjects in science. With Canada China always has a good and stable relationship. At present, the visa policies to Chinese students and scholars are becoming more open. 80% of applicants can successfully get visa to Canada in time. The migration bureau in Canada indicates that they are improving the procedures of applying and evaluating student visa in order to shorten the time for approving.

In New Zealand, the government promises that overseas students can work legally 16 hours every week; and they can immigrate to New Zealand and apply for permanent residence right after they graduate.

### **3.4 Implications of policies**

As I have discussed in 3.2, push factors include the reasons for studying abroad from individual perspectives and the Chinese policies on the issue. However, Chinese policies played a more important role on the issue of students and scholars studying overseas. According to Figure 3, the statistics is mainly about graduate students because they are the leading intellectuals that China sent to study in the developed countries in the beginning. From the number of graduate students studying abroad, we can see the changes in Chinese policies.

The first increase of number of graduate students studying abroad occurred in the periods of 1985 to 1987. The main reason for this steady increase is due to the implementation of “State Council Regulation on People Who Study Abroad at Their Own Expense” in 1984. In the periods of 1989 to 1991, the number of graduate students studying overseas decreased. The reason for that was the Tiananmen Square Incident in June, 1989. The Chinese government tightened the control on the issue of Chinese students studying abroad. From 1992 till 1999, the number of graduate students studying abroad increased dramatically. This is due to liberalization in the wake of Deng’s southern journey in 1992.

In the last two decades, China carried out many policies to increase student mobility out in order to keep connections and co operations with foreign developed countries and import advanced ideas and concepts from the West. However, there were not so many students that come back after 1992 according to Figure 3. With the deeper integrating into the internationalization and globalization, where market forces were at work, China was almost powerless to bring people back. It is not difficult to increase student and scholar mobility, while it is extremely formidable to attract people back even though the Chinese government has shifted the steering model from tight state control to the more market-oriented one.

### **3.5 Summary**

In this chapter I illustrated push and pull factors, which include reasons that led to and policies that triggered “brain drain” in China. According to Zweig and Chen (1995: 10), cross-national studies have found a set of relatively consistent factors that both “push” people out of their homelands and “pull” them into the developed world. Most studies see the low level of economic and political development in the Third World pushing academics and other professionals out, while the resources and

benefits of the developed world pull them in. Other “pull” factors include professional opportunities, living and working conditions, opportunities for employment, the presence of friends and family, and political freedom. Just like Lakshmana Rao (1979: 5) argued: it is the “comparison of the potential migrant’s situation in his country of origin with the situation of his peers in the country of destination that is critical to the decision of the potential migrant”. Thus, the pull of higher salaries, greater logistical support, political stability, and opportunities for mobility leads people to leave China and move to the developed world.

Just because of the intention to speed up economic development, China opened the door and integrated itself very much to the trend of internationalization and globalization. During the process of internationalization, there were more and more exchanges, including exchanges of scholars and students in the global academic labor market. Thus, the phenomenon of brain drain came up and became a very difficult issue for the Chinese government to handle.

Therefore, the government made and implemented a series of policies in accordance with Deng Xiaoping’s pragmatic policies. On the one hand, there were policies that encourage exchanges with developed foreign institutions in the West and encourage scholars and students to study abroad for China’s internal development. On the other hand, there were policies to constrain scholars and students to study abroad after the government realized more and more talents flew out of China. In a word, the encouragement and constraints of policies on studying abroad coexisted in the 1970s-80s, and constraints decreased since 1990s. The steering model shifted therefore from state-centered to self-regulate.

From the mid-1980s, significant number of scholars and students study abroad increased dramatically although the government promulgated some policies to tighten the control. This had something to do with the policies in the advanced capitalist

world. In the name of helping and cooperating with Chinese higher education institutions, the Western developed countries did get benefits from Chinese talents. They provided financial support and change their immigration and visa regulations for Chinese scholars and students.

Thus, tensions between China and developed countries on the issue of brain drain became more obvious and serious. In the modern knowledge-based society, competition for “top brains” is hard and real. How to attract Chinese talents back will be an important and difficult task for the Chinese government. Whether it is possible for China to reverse “brain drain” to “brain gain” and what kinds of policies it will implement are the main points of the next chapter.

## **4. How to reverse “brain drain” to “brain gain” in China?**

In the previous chapter I had discussed how and why many Chinese decided to study abroad in the process of internationalizing China. Many top “brains” outflow to the developed countries, which is one of inevitable consequences of internationalization and globalization. In the beginning of Open Door Policy, it was very difficult for the Chinese government to realize that internationalization could lead to China’s brain drain. With the deeper integration into the global world, China has realized the value of talents for the country. Therefore, the Chinese government now is trying to reverse “brain drain” to “brain gain”.

In this chapter I will firstly introduce some general backgrounds in which China decided to attract people to return. Secondly, several push factors from developed countries are analyzed. Finally, what strategies China made to pull people back and some individual reasons are illustrated.

### **4.1 General background**

Since Deng’s Open Door policy in 1978, China played a more and more important and active role in the international stage. China’s leaders issued and carried out several strategic policies to send scholars and students overseas for academic and technical training. The goal was to make up for the years lost through the Cultural Revolution and through these exchanges to catapult China into the top ranks of the global scientific community (Zweig&Chen, 1995:7). According to Altbach (1998: 169), political, economic and educational factors have all contributed to China’s overseas student policy. In China’s example, overseas study policy was directed by top government policy and the scope of individual or institutional decision making

regarding overseas study was quite limited—policy has shifted on several occasions to conform to political as well as economic priorities.

After the Tiananmen Square Incident in 1989, China readjusted its social and economic reforms. As a result, the speed of economic development slowed down. Considering the situation, Deng Xiaoping, virtually the most important person in China at that time visited some cities in the south of China at the beginning of 1992 and gave an important speech, in which he answered and settled down the relationship between socialism and a market-oriented economy that had obsessed. Deng (1992) stated: “The reason some people hesitate to carry out the reform and the open policy and dare not break new ground is, in essence, that they are afraid it would mean introducing too many elements of capitalism and, indeed, taking the capitalism road. The crux of the matter is whether the road is capitalist or socialist. The chief criterion for making that judgement should be whether it promotes the growth of the productive forces in a socialist society, increases the overall strength of the socialist state and raises living standards”. It was his speech that pushed the economic development into a new phase, called “a socialist market economy with Chinese characteristics”.

The economic reforms coincide with the information revolution, which have led the world into a new age of knowledge-based economy. The ability to generate, accumulate, deploy, and utilize knowledge information becomes crucial for development. As knowledge-based institutions, universities are called to play a more important role in the coming century. Furthermore, the information economy is international by nature. Capital, production, management, market, labour, information and technology are organized across national boundaries, which have resulted in strong tendency of globalization.

As a developing country, China is now in a crucial stage of transition from a planned to a market economy, and global forces make its economic structuring a more urgent task. The rapid advance of economic globalization, knowledge-based economies and information technology will lead to intensive activities in educational trade and cooperation. Cross cultural interactions, exchanges of students and faculty members, joint teaching and research programs, the internet, have formed an irresistible and irreversible trend of globalization of higher education, which have further pushed China's changes from outside world. China's entry into World Trade Organization (WTO) is part of this process. Currently, the global agenda has indeed influenced the state's expectations with respect to higher education, as the former Minister of Education Chen Zhili (1998) indicated in the World Conference on Higher Education in 1998, "the emergence of the information society and of the knowledge-based economy will bring substantial changes to our way of production, life, learning and even thinking. This in turn has raised new and future requirements for higher education and has resulted in profound changes in this sector" and "the Chinese government has always attached great importance to learning from the successful experiences and practices of other countries for the benefit of developing its own higher education".

With the going abroad fever, significant number of students studied overseas, while returnees were fewer and fewer. In addition, the Tiananmen Square incident in June 1989 significantly transformed the brain drain into a veritable flood<sup>5</sup> (Zweig & Chen, 1995:7). For example, in 1995 almost 40,000 Chinese students<sup>6</sup> were studying in the United States. China had overtaken India as a major sender of overseas students (Altbach, 1998: 140). Thus, it's critically difficult for the central government to

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<sup>5</sup> This is not shown in Figure 3, for here it includes all types of Chinese students studying overseas.

<sup>6</sup> This number includes all types of Chinese students studying abroad.

control. Therefore, China began to make some strategies to attract people return. In the mean time, foreign developed countries were doing the exact same thing by using more attractive strategies to keep Chinese stay.

## **4.2 Push factors**

A more purely macroeconomic explanation for the brain drain is the imbalance between the number of people trained in the developing country and the limited opportunities that exist in that country (Sanchez-Arnau & Calvo, 1987). The reverse may also be true: when Western economies go into recession, thereby shrinking the available job pool within the country, foreign students are far more likely to return home, especially if expanding economies and rising standards of living in their country increase professional opportunities at home (Huang, 1988: 238).

There does not exist any policies from the Western developed countries that make Chinese consider to return. However, there do exist some factors from Western developed countries that push Chinese back.

In chapter 3 I mentioned that lots of parents and students think the quality is better in advanced higher education systems abroad. However, it's very difficult to define and compare 'quality' because of its vagueness. Thus, we can not say that developed higher education systems necessarily have good quality or the quality overseas students expected. According to Habu (2000: 58), lots of Japanese women students studying in British higher education feel that they are intellectually disengaged and receive very little support towards passing their degree. The institutions don't care whether the students fail or drop out; on the contrary, they are more interested in the money they bring in. In this way, disappointment and dissatisfying to the advanced higher education systems in the developed countries push people back to China.



Another issue related to personal development is the ability to control one's own research. Chinese spend many years in research labs doing analysis for their research director, who sets their research agenda. According to Zweig and Chen's study (1995: 53), those who can direct a lab in China but are forced to work for others here in the United States may choose to return to China.

In addition, the competition in developed countries is getting stronger and stronger. Talented people who cannot get jobs or research positions in the West where they are their own boss or where they can propose their own research projects are more likely to go back. The labor market is not good enough for Chinese to stay there and it's almost impossible to find a decent job. Instead of being abroad to do some low level work, why don't they return to China where they can possibly contribute to the construction?

According to Zweig and Chen's study (1995), in the West many Chinese have serious worries about racism, crime and personal insecurity and lack of job stability, a concern directly related to social status. No matter how excellent one is, he or she is still a stranger in Western countries where culture differences hinder people from being a standard western. Moreover, Chinese may have difficulties to be used to the food, the fast pace of life and the way of building up networks there.

### **4.3 Pull factors**

People studying abroad might not return to their home countries until the economies improved significantly and that even then, it took proactive governments to give people strong incentives to uproot themselves from their comfortable living conditions in the United States.

In the last two decades, there have been great changes in China. Maintaining growth, reform, and stability in China, a country of 1.3 billion people, will be no easy task. There is no “quick fix” or one strategy that will reverse the brain drain, an activist government strategy that creates a positive climate for returned scholars and is implemented by a strong leader or ministry is a necessary step. In fact, the Chinese government tries its best to meet overseas students’ and scholars’ demands, provides stable political environment, speeds the economic development and adjusts policies. All levels of governments in China will pull talents back.

#### **4.3.1 Why do people tend to return back?**

In China, economic and political conditions are improved. Firstly, China is a country with the rapidest development in economy in the last decade in the global environment. Secondly, the political environment is turning for stability. Thirdly, the whole education system takes on a new look. Domestic higher education institutions are improved, developed and more internationalized. The whole higher education system provides an platform on which scholars and students can contribute themselves to the construction in China and simultaneously they can pay much attention to the fulfillment of self values and advancement. Fourthly, recruitment activities by developed education institutions abroad are vigorous. Last but not the least, most Chinese abroad believe that the root is forever in China. So when Chinese are getting older and older and when they find appropriate opportunities, they will definitely choose to return. Just like an old saying: “east or west, home is best”. All these become effective pull factors for students’ and scholars’ returning.

From individual perspective, the most common reasons given for returning in Zweig and Chen’s study (1995) are “higher social status in China”, “better career opportunities in China”, and “patriotism”.

Market economy makes people busy at making money. China presented a big market and, because there are as yet few government regulations, there is lots of opportunity for making money. That economics is an important motivating factor for some people is also indicated by the fact that as business opportunities emerge in China, those who are well positioned to gain from them—the well-connected Chinese who care little about political factors—are now looking for ways to return and profit from China's booming economy.

While economics may play a role, “level of income is not the strongest determinant of a decision to return to the home country or to remain abroad”. Individual factors are also important in the decision to emigrate. According to Glaser (1978), social origin (or social class) and the ability to adjust to foreign social and work conditions may have a major effect on a person's decision to stay abroad. Some studies also suggest that those who choose to emigrate are more self-interested than those who remain behind and have put self-interest ahead of the interests of their state. Although China's government may not formally espouse this view, it does reflect the views of the more conservative forces in the State Education Commission and other conservative institutions, who see those who return late as less than pure, not only because of the ideological influence of their time abroad, but also because they did not respond to their unit's request to return on time.

According to El-Saati (1980), people who go overseas have “an insufficient political consciousness”, being more concerned about their own research than about the national good. In the Chinese context, this would mean placing less importance on collectivist and “state-socialist” values and more important on individual advancement. Many do not want to be seen as rejecting China for their own interest because of the cultural reasons of face. Here a traditional Chinese concept is very suitable: a gentleman does not discuss personal interest (*zhunzi bu yan li*).

### **4.3.2 China's policies on attracting people back**

In the 1980s, authority over finance, exchanges, curriculum, student enrollment, and capital construction was decentralized, and science and technology research was commercialized. Returnees are strong bridge between China and the world. Schools understood the rich resources of human capital encapsulated in returnees, so they pushed more of their own faculty to go abroad and then competed to attract them back.

The renewed emphasis on economic modernization following Deng's 1992 southern trip led central leaders to devise positive incentives to attract people back. Thus, people's refusal to return from overseas pressured the government to adjust its policy. External pressure also came from the United States, which under the 1992 Chinese Student Protection Act allowed the over fifty thousand Chinese students in the United States to apply for permanent residence status. To compete with the United States for this pool of human talent, China had to liberalize its policies dramatically (Zweig, 2002: 175-176).

As Jiao (1998:72) states, Deng tried to overcome the impact of Tiananmen by warmly welcoming all returnees, regardless of their previous overseas activities. Deng also said: "we hope that all people who have gone overseas to study will come back. It doesn't matter what their previous political attitude was, they can all come back, and after they return things will be well arranged. This policy cannot be changed."

#### ***Policies In the late 1980s***

By an official account, 70 percent of the 14,000 returnees by 1984 were not being "fully used because of a shortage of advanced facilities and unsuitable work assignments" (China Daily, 1984: 5). In the late 1980s, with the limitation of the quotas for advanced academic rank and the scarcity of research funds, young scholars

had to wait for years before they could expect to make a name for themselves. These problems could lead to the returnees go back to the relatively congenial working environments and comfortable life styles in developed Western countries.

To alleviate these problems and help returned students and scholars to fully utilize their knowledge and expertise, Chinese authorities had developed a number of measures that proved to be effective.

To begin with, opportunities for job choice were being increased. Instead of arbitrarily assigning jobs to these returned students as it did with most of the home-trained students, the government allowed the returned students a choice of working in government organizations, for Sino-foreign joint ventures or for enterprises under collective ownership. Returned students were also allowed to run enterprises or companies with self-raised funds. To assist the returning students in their choice, the government had established the Chinese Returned Students Service Centre to provide links between the potential employers and the students. By late 1988, the centre had helped 109 students with advanced, foreign degrees to secure suitable positions. Due to its outstanding service, the centre was receiving dozens of letters from overseas per month inquiring about possible job vacancies in China (Wei, 1989).

To aid the returned PhD recipients who failed to find a satisfactory position, the government had established 145 postdoctoral research stations, which covered 21 branches of science and were located in 89 universities or research institutes. These temporary holding places accommodated about 40 percent of all returned students with PhD's from foreign universities (Wei, 1989). Subject to approval, the returned PhD recipients could choose to work at any of these postdoctoral stations for a period of two years and receive a substantial grant for their research projects. Twenty-five percent of the grants could be used to supplement living costs in addition to generous living allowance provided by the government.

Besides improving the job-assignment system and providing preferential working and living conditions for returned students, the government had made other special provisions. When returned students and scholars could not continue their highly sophisticated research in China due to the lack of facilities, they were permitted to work alternatively at home and abroad, conducting their work overseas while establishing their discipline at home. In addition, young scholars on government programs could apply to go overseas again when they fulfilled their terms of service in China (Wei, 1989). If, after all the efforts, young returned students still could not find a job commensurate with their training, they could be sent to study or work at foreign institutions again by the government (Yu, 1989).

To promote distinguished returned students and scholars to the senior academic rank, the government made plans to balance the number of returned students accepted by research institutes and universities with the quotas of senior academic titles for these institutions. This meant that these returned students and scholars would be promoted to appropriate senior academic ranks on the basis of merit without the constraint of quota limitations. Many returned PhD recipients had actually skipped grades and been appointed full professors. “Individuals returning from experiences overseas have tended to advance more rapidly within administrative and research establishments” in China (Reed, 1988: 102).

Even though the central government had already made so many strategies for the returnees, there were still many Chinese students and scholars that would not or delay in return. Chinese authorities became distressed. Perhaps very little could be done about this problem. Once these Chinese students and scholars were overseas, there was no way to coerce them to return except to “create a climate for attracting and retaining talent”, which could not be easily accomplished. Aware of this dilemma, Chinese authorities seemed to have adopted a rather conciliatory attitude. Instead of issuing harsh statements or denouncing defections, the Chinese government reiterated

that reasonable requests for extension should be considered under the circumstances prescribed by the regulations and laws of host countries (Yu, 1989). Even for those who had obtained permanent residency in the West, continued concern and solicitude should be extended.

### ***Policies since 1990s***

In the 1990s, the number of people studying abroad increased dramatically, while the proportion of returnees remained low. According to Deng's instruction, in March 1992, the Ministry of Personnel announced a series of strategies to entice students to return under the slogan "improving services for returnee students". The new policy (see Appendix) included (Xinhua News, 1993):

- Job introduction centers for returnee students in Shenzhen, Shanghai and Fujian.
- Preferential policies, including giving returnees more living space and more chances to receive higher professional titles, giving family members the freedom to move to new cities where the returnees had found jobs, and permitting students who had signed two- or three-year contracts with their research centers to either remain or switch jobs when their agreements expired.
- Assisting in the foundation of a national association of returned students.
- Providing greater support for science research

In August 1992, a Notification on related questions concerning scholars overseas (cited in Jiao, 1998:73) addressed issues including the extension of passports, visits by relatives, travel permits for scholars in China, and most important, allowing returnee scholars to decide where they wanted to work.

In 1993, the Third Plenum of the Fourteenth Party Congress put out a slogan to direct overseas study: “Support overseas study, encourage people to return, and give people the freedom to come and go” (Jiao, 1998: 72).

Educational support from developed countries is maintained and develops rapidly. The arrangements between countries range from bilateral agreements relating to student and faculty exchanges to the mutual recognition of degrees—for example, the many binational commissions governing the American Fulbright scholarship and exchange programmes (Altbach, 2004:21).

However, in order to remain students in China for graduate and postgraduate courses, the SEDC announced plans to expand China’s education through foreign cooperation in 1994 (He, 1994: 1). This creation of cooperative educational institutions on Chinese soil, involving foreign and indigenous participation, represents a collective form of knowledge transfer that may touch China in a deeper way than the individual contributions of scholars and students returning there under the various bilateral agreements I mentioned in the last chapter. This form of study abroad within China will enable Chinese students to take western-style courses without leaving the country. This is one of new forms of internationalization.

Cooperating with foreign educational institutions on Chinese soil is a great attempt for China and its higher education institutions. Absolutely, China benefits from it. However, the big winners are those foreign institutions and investing companies. Simultaneously, many western organizations and governments actively promote exchanges with China and more or less add fuel to the flames on the issue of brain drain.

According to an array of policies, returnees hold key positions in universities; salaries for returnees are higher and higher; and new programs, such as “the Changjiang



Scholars Scholarship program” and “One Hundred Talent Program”, target overseas scholars. In addition, leading universities, like Qinghua, promised that returnees’ children could automatically gain admission to the university’s own prestigious primary and middle schools (Zweig, 2002: 181). All these have an effect: after 1995, the number of returnees picked up gradually.

To date, the Chinese government has made several policies and established more than 70 industrial parks for returned overseas students to start businesses. In these industrial parks, returnees can easily get loans to start business and their relatives can also get permanent residency (Xinhua, 2003). In addition, some scholars and students who are dispatched to study abroad by government will get salary, social and health insurance and post when they are away. If overseas students come back within one year after their graduation, they can buy a private car without paying tax on it. In 2004, the central government sponsored 20 excellent returnees to do research and start undertaking with 300,000 Yuan<sup>7</sup>. Although the intention of Chinese government is good, the number of returnees and the amount of money they can get are too less in such a huge country with numerous excellent scholars. So hopefully, this strategy will not be a symbol hanging on the top.

Moreover, based on the Chinese Returned Students Service Center, the government will connect all the centers which store all the information of them and set up WebPages on the internet so as to increase the success employment rate of returnees. In fact, there exist some private service centers which are especially for returnees to find jobs and build the bridge between returnees and enterprises. Recently, for some scholars and students abroad, they can find and confirm jobs before they come back.

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<sup>7</sup> Yuan is Chinese currency.

However, scholars demand one more thing—China should allow them to have double nationality (Sina.com.cn<sup>2</sup>, 2004). According to some statistics, there are over 70 countries admit and accept citizens' double nationality in the world, excluding China. But with the open policy in China, more and more Chinese anticipate double nationality in China can put into practice so that they can devote themselves in the construction of modernization in a proper way. Because if one changed the original Chinese nationality to Norwegian, for example, as a foreigner employee in China, he/she needs many extra paper and procedures than usual; meanwhile it brings some difficulties for the employers as well. It is the same for scholars' children on the matter of going to school and so on. Therefore, the single nationality in China hinders people holding another country's passport returning to start an undertaking. Recently, an officer in Science and Technology Department asserts that China is considering learning from India to practice double nationality for those specialists and talents.

### ***Policies at the local level***

In the late 1980s, the State Planning Commission in Beijing made special appropriation to construct apartment buildings for returned postdoctoral researchers. Many blocks had already been completed (Yu, 1989).

In 1999 the state's positive attitude toward the private sector generated greater interest among overseas scholars who wanted to start their own business (O'Neill, 2001). In the same year, Beijing built a high-tech park for returnee businessmen. In 2001 the Chinese government unveiled a new policy to protect the intellectual property rights of mainland scholars who remain overseas and to reward them financially so as to encourage them to contribute to China's development (Zweig, 2002: 181). This is a very flexible policy and goes with the tide of internationalization and globalization.

Recently, Beijing as capital is the first to openly and widely advertise for leading cadres at the top level in governmental bureaus and enterprises (Guo & Zhou, 2004). Overseas applicants with same qualifications will be employed favorably. It is a great opportunity for overseas students and returnees to contribute themselves into the construction.

Moreover, Beijing made law to ensure returnees to start an undertaking in Zhong Guan Cun Technology Park. According to Zhong Guan Cun Technology Park regulations, Beijing will import talents and returnees in the fields like technology and management from the other provinces in China. Those who are employed by company can get residence permission in Beijing without taking the number of people assigned or allowed by the company to come and work in Beijing.

In reality, it is not only Beijing are trying to attract returnees, but also in other cities, such as in Shanghai, Suzhou, Chengdu, Wuhan, Xi'an, Changchun and Guangzhou. Shanghai has proposed clearly in the earlier times that they will attract 10,000 returnees in 2004. In Xi'an, returnees can set up a high technology enterprise with the help of the local government and can hold 70% share of the enterprise after certain evaluations. Wuhan sponsors returnees with doctoral degrees 2-3 million Yuan every year, helps them raise funds for their companies and provides over 40,000 square meters apartment for them. In addition, doctor returnees obtain 2,000 Yuan extra in each month. Till now, there are 167 doctors who have already got the money. Chengdu government supports and helps overseas students with respect to their families, children's education and so on and so forth.

## 4.4 Summary

In the 1990s, China faced new challenges. More and more students and scholars chose to study abroad, while the proportion of returnees was low. Since 1995, the number of returnees began to increase gradually. The reasons may be, for example China develops rapidly in economy and political environment is stable and safe, which attracts more and more overseas students and scholars to come back. Moreover, the less state-centered and more market-oriented steering model in China provides opportunities for scholars and students undertake their carrier, which attracts them return.

However, it is not an easy task to change the situation in which many Chinese scholars and students do not return after they finish the studies. Globalization increased mobility of Chinese students and scholars greatly. The intense competitions among countries are actually the competitions on talents in some way.

In reality, China indeed needs those talents to build the country and make it become a developed country as soon as possible. China couldn't lose talents as before and the situation should be changed. Therefore, China implemented various policies which provide better living and working conditions, raise funds and give preferential treatments for returnees. The reason for those preferential policies and regulations for returnees is that they bring great value to a school's political economy, graduate education and prestige. They play an important role in the process of modernization generally and they influence the development of Chinese higher education system particularly, for they are channels for technological transfers and other exchanges. Moreover, they also are better researchers and fundraisers who have transnational skills: a better understanding of foreign science and research, broader research agendas due to familiarity with foreign research methods, a greater facility with

foreign equipment, better foreign language skills, a stronger ability to adopt new research directions and a greater ability to develop international cooperation.

The value of returnees is huge for China. Policies on attracting people back display the central government's intentions and function well. The result shows successfulness of those policies. However, foreign countries are doing the same thing. Since the gap between China and Western developed countries is decreasing, currently some factors in developed countries push Chinese back. However, those developed countries don't give up attracting Chinese "brains" at all; rather they are making more attractive strategies and programs to appeal Chinese. The tensions between China and developed countries are getting stronger. Competing talents becomes a focus in the global labor market.

## **5. Summery and concluding remarks**

China, as a country with the rapidest economic development in the world, faces great changes and challenges as well. National policies are consistent with the trend of internationalization and globalization. Policies on the issue of studying abroad exemplified this trend. On the one hand, these international policies are very successful in China. Many great achievements are obvious. On the other hand, China was trapped in problems and dilemmas that these international policies brought. Brain drain is one of the consequences of China's internationalization. Facing this kind of dilemma, Chinese government made and implemented a series of policies to reverse the situation. However, it is extremely difficult to attract talents back to China in the global labor market where is full of student and scholar mobility.

As indicated at the beginning, the study is aimed at examining impacts of internationalization and globalization on higher education policy in China and on Chinese students and scholars' international mobility. Based on the preceding chapters, some concluding discussions will be presented in the first section of this chapter. In the final part, questions are raised for future studies.

### **5.1 The impact of globalisation and internationalization on China's policy and steering model**

In the 1970s, the government controlled everything, academics couldn't decide anything in institutions of higher education and market was still a new concept in the planning economy. The highly tightened state-control model hindered development in all fields.

Since the open door policy in 1978, many great changes happened in China. The development in economy, politics, education and culture is rapid. In order to shorten the gap with developed countries and play a more and more important role on the global stage, China's state policy is mostly in accordance with globalization and internationalization. For doing so, the government tried to change the steering model gradually from the sovereign and rational-bounded to the institution- and market-oriented. The state is losing its power in the triangle of coordination (see Figure 4). From the Model 1 in Figure 4, we can see that the Chinese government was controlling everything in higher education policy making; while the Model 2 in Figure 4 shows a different look which indicates the central-regulation is moving towards self-regulation and market-control. Globalization and internationalization indeed influence this change.

Through analyzing policies on the issue of studying abroad, we can see that the Chinese government encourage scholars and students to study abroad in order to speed up the internationalization, while bureaucratic constrains remained a powerful influence on the nature of transnational exchanges.

The educational system was significantly affected by internationalization in China. Moreover, Chinese were eager to explore and accumulate their knowledge, and they would have higher living standards. These demands can foreign universities in developed countries provide. Therefore, going overseas is inevitable. The Chinese government had to alter its regulatory regime in many ways and undermine its own controls.

China's educational organizations and the channels of global transaction had only partial control over the personnel flows between China and the world outside (Zweig, 2002: 209). According to Hayhoe (1984: 208), beginning in the early 1980s, central administrative control over transnational exchanges decreased, even though

bureaucrats struggled to maintain some authority. Before 1985, MOE (renamed SEDC in 1985), the Chinese Academy of Science, and the Chinese Academy of Social Sciences monopolized transnational educational channels. Based on negotiations with the key ministries—Personnel, State Economic Commission, and State Planning Commission—MOE set quotas for graduate students and research scholars going abroad based on the labor needs of the central Five Year Plan. Key schools were favored, but to enhance geographic distribution administrators also chose people from nonkey institutions.

In the context of China, it is really a big challenge for the government to bring the mechanism market in its state-controlled steering model. The contradiction between the state and market is great. However, the government did make the decision to open the door to the outside world in order to speed up development in economy, politics, education and culture. But the fact is--in today's more and more internationalized and globalised world, once you open the door like China did, it is impossible to step back again. China's strong state control and regulation is not appropriate any more. The market steering model has to be introduced in China.

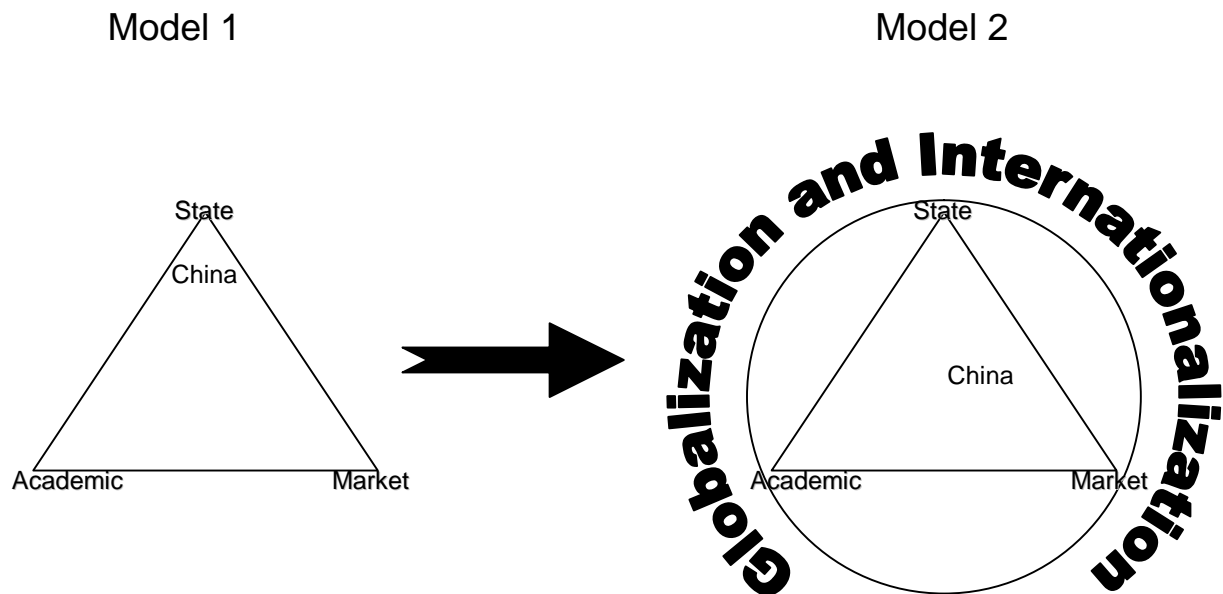
Decentralization and privatization increased the number of people who went overseas. Private market forces were clearly at work. Under the self-paying category, the state was almost powerless to bring people back. A real market in intellectual labor began to emerge. Allowing individuals study abroad on private exchanges dramatically increased the outward flow as well as increasing the percentage of nonreturnees. However, domestically the demand for foreign technology, cooperation and funding was great. Nevertheless, before 1992, the Chinese government neither lowered all barriers nor lost all controls. In terms of getting passport and the allocation of key sources, such as foreign teachers and advisors, the administrative control was still very tight. However, the Western developed countries made many attractive offers to appeal Chinese scholars and students. For example, I have



discussed earlier in chapter 3 about developed countries' help and cooperation with China, and their adjusted regulations on visa and immigration.

In the era of post-1992, controls and constraints on the issue of going abroad decrease dramatically comparing with the period before 1992. The Chinese government adjusts its policies, resulting in a much more porous, open and modern system than which existed at the end of the Maoist era and in the 1970s and 80s. From the 1990s, the trends of internationalization and globalization absolutely have great impact on China, its higher education system and its policy-making in educational domain. In the triangle of coordination, market-oriented system appeared (see model 2 in Figure 4). China is moving to the direction of market corner in the triangle. The movement from the state to market is very natural and is consistent with the shift from planning economy to market economy. More open the door is, more market-oriented the steering model in China will be. Just like I argued earlier that China can't step back once the door opened to the outside world. However, interesting enough, the communist party is still in the regime. China is trying to attract people back by using the market, which shows the impact of globalization and marketization.

**Figure 4 The Triangle of Coordination in the context of China**



## 5.2 “Brain drain” or “brain gain” for China?

The more and more flexible mobility of talents and experts in the global labor market has an extreme impact on China’s current situation; meanwhile it constitutes a potential threat to China as well, namely growing brain drain and loss of advanced technical and professional specialists who would be capable of contributing to poverty-alleviating improvement in the living conditions. Undoubtedly, this is a negative effect on China in the process of rising international mobility of skilled human resources.

However, if it is true that globalization is a hidden force and the boundaries among countries blurred, people studying and staying abroad shall not only be defined as brain drain, it can be brain gain as well. So we come to the questions like what is the brain drain, what is the brain gain, what are the criteria to distinguish them. There are full of dilemmas in the answer of these questions.

In the context of China, brain drain and brain gain coexist. How balanced between them is difficult to assume. From the overview of policies on the issue of studying abroad in China since 1978, the following analysis is my conclusion on the issue of brain drain and/or brain gain.

There were great “brain” losses since the policies on encouraging Chinese students and scholars to study overseas. The “rising tide of going abroad” in the 1980s depleted a few research institutions of their bright young employees and placed some colleges and universities in an emergency situation in terms of faculty members. A newspaper report disclosed that one academic department at a Shanghai university had to suspend its enrolment because the majority of the faculty had gone overseas (Du, 1990). It was not uncommon for many national-echelon colleges and universities to have one-third of their faculty members working for advanced degrees at foreign universities.

Moreover, a growing number of Chinese students and scholars were extending their stays or trying to seek permanent residency in foreign countries. As many as 8,500 Chinese students and scholars had managed to remain in the United States “either by legally changing their status or simply disappearing into the American melting pot” between 1978 and 1988 (Orleans, 1988:9).

Though the loss of their precious talent was not uncommon for developing countries, it was particularly damaging to China for very compelling reasons. First, China’s

ambitious Four Modernizations drive needed huge numbers of highly professional and skilled human resources, especially those trained in the industrialized West with knowledge and expertise in frontier disciplines. Second, among so many developing countries who have almost the same situation as China, China is the one that has so many of its intellectual assets to foreign developed countries in a matter of twenty years. Though China predicted that there would inevitably be some loss of talent in such extensive exchange programs and among self-paying students, the rapidity and the extent with which the brain drain had been developing presented a challenge well beyond China's expectation.

The nonreturn or delay in return of Chinese students and scholars distressed Chinese authorities. However, the Chinese government carried out a policy for extension, which I analyzed in chapter 4. This was seen to be a wise policy on the part of the Chinese government. From a long-term point of view, the brain drain would not be a complete loss for China. Delayed returns would enable Chinese students and scholars to acquire more practical experience in their fields of study, which China was not yet well equipped to provide. Also, given China's present level of scientific and technological development, it would be more profitable to have its talent continuously upgraded in the West than to have it back and then underused or even wasted. In this sense, the industrialized West could actually be utilized as a repository or a perpetual training ground of the precious scientific and professional personnel essential to China's future development.

The same rationale could be applied to those who had already emigrated to the West. Wherever they lived, these "offspring of the Yellow Emperor" would remain committed to their native land. This was evidenced by generous, significant contributions by millions of overseas Chinese living in many parts of the world who still "retain a strong sense of loyalty and obligation" to China (Maddox & Thurston, 1987). Many of them had been acting as a "major, distinct constituency" in

promoting China's extensive scholarly and academic exchanges with foreign countries (Ibid.). Some had spent substantial amounts of time and money for the sake of China's scientific and educational development. The deeply ingrained patriotic sentiments and Confucian tradition made it possible for the Chinese in all parts of the world to transcend political differences to contribute to the prosperity of the Chinese nation. It seems that the brain drain will only be temporary, and therefore, should not be a big worry for China. From a long-term, strategic point of view, China's loss of a certain proportion of students and scholars should be neither a complete loss nor a national crisis.

With their newly acquired knowledge and expertise, the students and scholars who returned by the late 1980s had been playing key roles in China's higher education, scientific research and production management. For example, of the 36 institutions of higher learning directly administered by the SEC, 17 were headed by returned scholars (Li, 1988). Besides taking up administrative responsibilities, many returned students and scholars had assumed leadership roles in their fields of study, making up 30 to 50 percent of all advisors of graduate courses. Some had been instrumental in establishing areas of study and research new to China (Yu, 1989). Similar contributions by returned students and scholars are evident in the Chinese higher education system.

In addition, Chinese who resident abroad are still making contributions to China, their families, and their home work units or universities. China may benefit from "storing brainpower abroad". Therefore, where people live can not be used as the criteria for brain drain and brain gain, rather whether they have connections and co operations with China is the key point.

Generally speaking, in the global world, greater mobility of talent may not be negative for China. In the first place, those talents may provide a positive signal that

motivates others in China to acquire more education, thereby raising human capital and possibly promoting growth. Second, students and scholars may in due course return, or through networks and resources repatriation, such as through remittance, provide essential inputs to new business and activities in China. Third, they may actively promote a more effective flow of knowledge and information. Fourth, the changing nature of mobility—in part due to major advances in communications technology—may be limiting the extent to which skills are actually lost.

In short, China benefited much from the study-abroad programs it had been aggressively pursuing over two decades. These programs not only provided a catalyst for the rejuvenation of China's paralyzed higher education, but also trained and upgraded invaluable human sources for its future development.

### **5.3 Future studies on the issue of “brain drain” and “brain gain”**

In spite of the loss of talent, Chinese authorities did not stop or reduce the numbers of their students and scholars to the developed countries, as the gains from the exchanges far outweighed the losses in long-term, strategic considerations. For the developed countries, the cost was an investment in a worthy cause. As both China and the developed countries will gain in the final analysis, the challenge is how best to maintain this delicate balance and prevent incidents which might “kill the goose that lays the golden eggs”.

The brain drain from China has been the object of much policy discussion for many years, but knowledge of the empirical magnitude of the phenomenon is limited because the lack of systematic data sources. Therefore, another promising direction for future research would be to try to obtain more precise systematic data sources,

especially more detailed information about the occupational categories of highly skilled migrants, in order to assess whether the brain drain from China is especially marked for particular professional groups. In addition, precise and sufficient data sources are necessary for all researchers who wish to study the case of China.

Therefore, this study is expected to provide a worthwhile starting point for future studies on the issue of “brain drain” and “brain gain” in a globalised world.

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# Appendix

## Periodization of the Open Door in Education, 1978-1994 (Zweig 2002: 165-166)

<b>1978-1979</b>	<b>Initial opening</b>
March 1978	National Conference on Education
April-May	National Conference on Science
June	China decides to send people abroad to study subjects other than language
August	MOE notice, "Concerning the Increase of Students Study Abroad and Their Selection"
October	"Understanding on Educational Exchanges with the United States"
January 1979	Chinese-American Agreement on "Cooperation in science and Technology"; China joins the World Bank and begins to negotiate educational exchanges
<b>1984-86</b>	<b>Second phase of reform</b>
November 1984	Second National Work Conference on Study Abroad
December	State Council Regulations on People Who Study Abroad at Their Own Expense
March 1985	"CC-CCP Reform of Science and Technology management System"; leads to major changes in the political economy of S&T and the commercialization of scientific results
May	"CC-CCP Reform of the Educational System" expands powers of universities, cuts financial support to most schools, but tightens controls over 36 key universities
July	U.S.-Chinese "Protocol for Cooperation in Educational Exchanges"
May 1986	"National Conference on Study Abroad" expands the authority of provinces and cities to send people abroad at their own expense
<b>Fall 1986-87</b>	<b>Student protests trigger first round of tightening</b>
December 1986	Major student protests over elections within universities lead to fall of General Secretary Hu Yaobang in January 1987
December 1987	"Certain Interim Provisions of the SEDC on the Work of Sending Personnel Abroad"
<b>Fall 1988</b>	<b>Another round of tightening</b>
	<b>Drop in number of returnees after spring 1987 Antibourgeois Liberalization Campaign triggers policy debate</b>
	<b>Zhao Ziyang supports "storing brainpower overseas"</b>
October 1988	Ming Pao reports number of students to the United States to be cut from 6,000 to 500; never put into effect
	Increases number of university lecturers with M.A.s who go overseas on J-1 rather than F-1 visas
<b>Fall 1989</b>	
<b>—Spring 1992</b>	<b>Post-Tiananmen policies: external softening, internal tightening</b>
	<b>Class conflict applied to struggle between some overseas students and SEDC</b>

**State initially suggests it will send fewer students and more visiting scholars overseas, but in October announces that level of government-sponsored students to be maintained**

**Number of private sponsored students increased significantly after Tiananmen**

**TOEFL takers jump from 36,000 in 1989 to 60,000 in 1990**

January 25, 1990 “Supplement Provisions for Personages with University Graduate and Postgraduate Qualifications Study Abroad at Own Expense

College graduates going abroad to study on their own must first pay back costs of their education

April, 1990 U.S. Chinese Student Protection Act vetoed, but replaced by President George Bush’s Executive Order allowing all Chinese in United States as of April 1990 to apply for permanent residence and all J-1 visa holders to shift to F-1 visas

Summer 1990 New regulation that graduates need 5 years work experience before going abroad  
Right of approval transferred from the work units to the provincial education commission

May 1991 “Decision to Send More Technical Workers Abroad” expands program for training managers and technical specialists abroad in countries with “good political and economic relations with China” (not U.S. or Canada)

**Post-1992 Liberalization in the wake of Deng’s southern journey**

August 1992 Government circular offers incentives to return, especially better living and working conditions, grants for research, freedom to go out again, and right to import autos and computers duty free

Intercity competition to lure back returnees through preferential policies

April 1993 “Conference on the Work of Sending Personnel to Study Abroad relaxes standards for studying abroad

June 1993 Joint Circular on the Placement of Returned Students” makes key point that “if some students want to move to work in other units, personnel departments should try to meet their requests”

Returnees can apply for work in all areas of the economy or set up their own companies

January 1994 SEDC announces plans to expand China’s education through foreign cooperation