Learning to compete: China’s efforts to encourage a “reverse brain drain”

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Introduction

A unique quality of China’s efforts to encourage people trained overseas to return and work in China is the fact that so many levels of government and organizations actively promote returnees. While the national government sets broad guidelines for policy, and moulds the overall socio-economic and political climate, many institutions have actively engaged in generating a return wave. Also over the past 20 years, these different levels of government and organizations have changed the way they view and recruit returnees largely due to their divergent interests. Early on, city governments learned to compete among themselves over returnees. However, the central government had to go through a serious learning process, where it recognized that the best way to improve science and technology in China was by letting people go abroad freely, and then compete for them in the international marketplace by creating a domestic environment that could attract them back. And while leaders of academic, scientific and business institutions initially may have harboured serious concerns about returnees, because their knowledge threatened those who did not go overseas, China’s internationalized economic, scientific and educational system has led most institutions to value, if not overvalue, the contributions that returnees can make.

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China’s recent success in drawing back people who studied overseas shows that individual calculations, too, have changed. For years, the return rate for those who received degrees overseas was very low. And while serious questions remain about the quality of the current crop of returnees—an issue we address in this paper—their number has risen dramatically since 1999. China is following the path of South Korea and Taiwan, where a thriving economy and liberalized polity turned a brain drain into a brain gain. Yet China’s return flow has picked up despite an authoritarian regime and low per capita income.

Hence the question: why this return flow? To answer this query, the paper describes the efforts of the different levels of government and domestic institutions to create a reverse brain drain. It then assesses whether government policy is key in encouraging people to return. Most studies argue that governments have limited impact on the return tide. Preferential policies for returnees can, in fact, increase the numbers going abroad, since preferred benefits are available only to returnees. However, rewarding returnees does increase their quality if not their numbers.

Before proceeding, we should show that there has been a reverse tide in the past eight years. During the mid- to late-1990s, the average annual increase in the number of returnees was approximately 13 percent, and since 2000, the rate of increase jumped. Figure 1 shows the dramatic increase in the number of returnees. Still, returnees as a percent of people going overseas have not increased, as liberalization of the policy on going overseas on one’s own money (zi fei liu xue) has led to a massive increase in the number of people going abroad.

**Figure 1  Number of returned students, 1978-2004**

![Graph showing the number of returned students from 1978 to 2004.](source: China Statistical Yearbook, 2004, p. 781.)
National level policies: Changing the environment for returnees

Central policies towards returnees have been complex and have shifted over time. Differing government sectors have espoused different views, based largely on their institutional interests. Also, domestic political evolution led to policy adjustments on overseas education. For example, following student demonstrations against the central government in late-1986 and early-1987, the party tightened regulations on overseas studies. This pressure persisted through 1987 when Deng Xiaoping criticized the large number of students going to the United States. This speech became Central Document No. 11 (1987) and triggered the State Education Commission’s own Document No. 749, which proposed to cut the flow of students going to the U.S. from 68 to 20 percent of the total and pressure students in the U.S. to return. In 1988, the State Education Commission (SEDC) forced lecturers in universities (many with MAs) to shift from “private” to “public” passports, making them eligible for more restrictive U.S. J-1 student visas, rather than highly flexible F-1 visas.

A year later, a serious debate ensued about the whether China should continue to send students overseas. During a central meeting about overseas study, then Party General Secretary Zhao Ziyang, took a long-term perspective, describing China’s brain drain as “storing brain power overseas.” Similarily, the State Science and Technology Commission supported sending more people abroad, despite the brain drain, arguing that only those who stayed abroad would really learn the positive quality of American scientific research and be capable of contributing to China’s scientific advancement. However, the Education Commission, more conservative and concerned about “face”, felt that the lack of returnees called for a tightening of the outflow. Today’s “reverse brain drain” has proven the former viewpoint to be prescient.

The Tiananmen crackdown of 1989 reinforced this tendency to restrict the flow and led the state to view most overseas students as threats to the Communist Party and created an inhospitable environment for those who contemplated returning. With internal documents at that time imbued with the language of class struggle, echoing the Cultural

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3 Interview with a Wuhan education official.
4 Lecture by Xu Lin, Fairbank Center, Harvard University, December 1989.
Revolution, it is no surprise that most surveys of overseas scholars found that very few were willing to even consider returning to China.\(^5\)

But when students selected the “exit” option and refused to come home, some Chinese leaders listened. Deng Xiaoping called on overseas students to return to help the motherland. “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.”\(^6\) Deng also said that “if people want to make a contribution, it is better to return”. Deng reportedly tried to improve the climate for returnees in 1991, but strong opposition prevented him from instituting a new policy.\(^7\)

In March 2002, the Ministry of Personnel responded to Deng’s initiative and announced a strategy to entice returnees under the slogan of “improving services for returned students”. The policy included:

1. job introduction centres for returned students in Shenzhen, Shanghai, and Fujian (although five cities had already established their own centres);
2. preferential policies, including: (a) giving returnees more living space and more higher professional titles; (b) letting family members move to new cities where returnees found jobs; (c) permitting students who had signed two- or three-year contracts with their research centres to either remain or switch jobs once their agreements expired;
3. establishing a national association of returned students;
4. increasing support for scientific research.\(^8\)

In August 1992, Li Tieying, chair of the State Education Commission, publicly raised a new 12-character slogan that defined the changed perspective on returnees. The slogan, “support overseas study, encourage people to return, and give people the freedom to come and go” (zhichi liuxue, guli hui guo, lai qu ziyou), became official policy at the Fourth

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Plenum of the 14th Party Congress in November 1993. This policy, as well as a series of related innovations, demonstrated a new spirit of flexibility towards returnees. In fact, in a form of self-criticism, a conference on the “Work of Sending Personnel to Study Abroad,” convened in April 1993, admitted that policies since 1989 had been “too political.”

Allowing returnees to work in units and cities other than the one from which they had left created a new talent market, which enervated inter-city competition for returnees, as cities could now attract overseas scholars who had not previously worked in their city. This policy change allowed Chinese who had left from cities or units, which they did not like, to move to any city or unit that would employ them.

In 1996, the Foreign Affairs Bureau of the Ministry of Education (MOE) began to encourage people who remained overseas to return to China for short visits and “serve the country” (wei guo fuwu) from abroad. Under the “chunhui jihua”, or “spring light program,” the government funded short trips for lecturing or research collaboration. Some scholars may have taken such trips to see if conditions in China warranted returning. President Jiang Zemin reinforced this perspective in 1997, when at the 15th Party Congress of the Chinese Communist Party, he called for people to return and serve the country from overseas.

In 1998, the central government increased investment in higher education and encouraged universities to use those funds to attract overseas talent. In May that year, Jiang Zemin’s speech on the occasion of the 100th anniversary of Peking University (Beida), called for China to establish world-class universities, and called on Beida to lead the way. Under the “985 Plan,” named after the date of his talk, the government invested billions of RMB in nine universities to make them world-class universities and poured an enormous amount of funds into Qinghua and Beijing Universities.

Other national policies indirectly improved the domestic environment for returning to China. A key reform occurred when the 1999 National People’s Congress declared the private sector part of the national economy, and not a mere supplement to the state-led sector. At that time, few mainlanders living overseas had any interest in working in state-owned industries, preferring instead employment in foreign invested

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9 See “The decision on several questions on establishing a socialist market economy” (Guanyu jianli shihuizhuyi shichang jingji tizhi rugan wenti de jueding). Interview with an official in the Ministry of Education, 2004.

firms or setting up their own firms. Now those who wanted to return to China and establish a company could feel relatively confident that the state would not shut them down.  

Entry to the World Trade Organization enhanced domestic demand for returnees. Possessing the very qualities that China needs to compete in the global economy, such as Western business knowledge and knowledge of international law, overseas students became a valuable commodity in the domestic economy. WTO accession brought many multinational corporations to China, which needed mainlanders with Western experience and training; not surprisingly, many mainlanders were keen to return to China on expatriate terms.

A significant change in the worldview of China’s leaders created more flexible policies. In particular, Jiang Zemin recognized that there is a global market for talent and that China must compete within that market, even for its own people. According to Jiang, “Competition in scientific research is competition for talents.” Under globalization, China can no longer lock up its own people; if its intellectuals and business people are to learn from the world, China must let them go out into the world. But they then become international commodities over which China must compete with other countries. Thus under globalization, reforms become even more critical. Premier Zhu Rongji concurred when, at the end of 2001, at the 6th Session of the Worldwide Chinese Businessmen’s Association, he remarked that henceforth China would stress the infusion of human talent and technical skills, rather attracting foreign capital. This was an important response to the policy of “building national strength through science and education” (ke jiao xing guo) and an important step towards the current policy of “strengthening the country through human talent” (rencai qiang guo).

In October 2002, the central government adopted its most flexible position when it recognized that since most people will not return, non-returnees must participate in China’s development. This turned a failure in overseas education policy—the “brain drain”—into a positive attribute, as those who remain overseas could still serve the goal of national self-strengthening. In a document coauthored by numerous ministries, people overseas were encouraged to participate in projects in China in a

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13 Comments by Jiang were made during an interview with editors from Science Magazine. See “Many Chinese students don’t go back home,” *Singapore Straits Times*, 19 June 2000.
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Figure 2  Structure of organizations in the Ministry of Education that facilitate returnees

- Ministry of Education
  - Department of International Cooperation and Exchanges
    - The China Scholarship council
    - Chinese Service Center for Scholarly Exange
    - Editorial Board of *Shenzhou xueren*
    - National Research Committee of Overseas Studies
    - Training Centre for Overseas Study
    - Education sections in Chinese embassies and consulates in foreign countries
      - 62 Application agencies
      - 27 Sub-Centers
      - *Shenzhou xueren* and its website
      - 10 subordinated committees
      - 11 Training divisions
      - 55 Education offices in foreign countries
variety of ways.¹⁴ In adopting this perspective, China joins many developing countries, which have turned to the “diaspora model” through which they encourage their citizens who have settled abroad to help their motherland.¹⁵

In 2003, President Secretary Hu Jintao and Vice President, Zeng Qinghong, gave a series of speeches, known as the “three talks” (san pian jiang hua), which have reconfirmed the support of the central leadership for overseas study. These speeches confirmed that the role of returnees is “irreplaceable” (buke daitide) and of “outstanding historic role” (dute de lishi zuoyong). While returnees need to see concrete benefits—salaries and working conditions—if they are to be enticed back, an improved climate, created by a central government that now values human talent, is critical to their individual decisions to return.

Today, the Ministry of Education has a plethora of organizations, which are engaged in encouraging more returnees or in assisting those who have returned to settle down in China more comfortably. Figure 2 shows the list of organizations.

Central policies to encourage more returnees

The list of specific programs or policies introduced by the Ministry of Education, the Chinese Academy of Sciences, and other related ministries, is too long to present here. Instead, I will create a taxonomy of policy directions and discuss the more important policies in some detail.

Mobilizing official forces overseas

To encourage returnees, the state mobilized officials in embassies and consulates to organize overseas scholars into various organizations. In the 38 countries where overseas students are most concentrated, the government established 52 educational bureaus in embassies and consulates, which helped form over 2000 Overseas Students Associations and


over 300 professional associations for overseas scholars.  

Science officers organize overseas scholars to attend the Science and Technology Convention for Overseas Scholars held annually in Guangzhou in December.

Service Centers for Overseas Study under the MOE, which have been set up in most cities, send out recruitment delegations, part of the state’s efforts to strengthen the reverse flow. Articles in Chinese community newspapers announce the impending arrival of such delegations, describing extremely high salaries that companies in the delegation are offering to returnees. However, the salaries or housing benefits often do not materialize when the scholar returns to China—particularly if they are moving to a university or research lab. Also, while the delegations collect many resumes, they rarely send acknowledge letters, leading many overseas scholars to see such trips as junkets for local officials. In some cases, even after overseas scholars visit China for job interviews, no job ever materializes, generating a great deal of cynicism about such overseas delegations.

In 2002, the Office for Work on Overseas Study and Returnees (Liuxue huiguo gongzuo bangongshe) was established, unifying resources expended on, and efforts to attract, returnees. It then immediately began encouraging exceptional overseas scholars to return and serve the country.

Financial policies

Numerous state programs give overseas students and scholars financial support if they return. In 1987, the former Education Commission established the “Financial Support for Outstanding Young Professors Program” (youxiu qingnian jiaoshi zizhu jihua), which by the end of 2003 had awarded 2,218 returning professors with a total of 144 million RMB. Other programs, and the year of initiation, include the “Seed Fund for Returned Overseas Scholars” (1990), “Cross Century Outstanding Personnel Training Program” (1991), the “National Science Fund for Distinguished Young Scholars” (1994), and “The One Hundred, One Thousand, and Ten Thousands Program” (1995).

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16 Interview in Beijing with MOE official, 2004.
17 “Wo wei shenme xuanzi liu zai meiguo—yu guo nei shaoping daibiaotuan jiechu de qian qian hou hou” (Why did I choose to stay in America—before and after meeting with a recruitment team from the mainland), Source: Online: Wensxue cheng, huiguo fazhan, 12 August 2002.
19 Under this program, funding given to people overseas must be used within China.
20 For a detailed discussion of these projects see Cong Cao, ‘China’s Efforts at Turning ‘Brain Drain’ into ‘Brain Gain,’ East Asian Institute Background Brief, No. 216, November 2004.
above, the state increased funding for universities and the Chinese Academy of Sciences.

**Improving the flow of information**

To encourage people to return, the government improved information flows on conditions in China and between units in China and scholars overseas. In 1987, the Education Commission established “*Shenzhou xueren*” magazine and its electronic board, an important bridge between overseas scholars and domestic organizations. Over the past few years, the MOE has expanded the yearly Overseas Chinese Scholars meeting in Guangzhou, which introduces domestic governments and companies to overseas scientists who present recent projects. The 7th annual meeting was held in December 2004.

The Ministry of Education (MOE) established several research organizations to direct policy. In October 1991, it established the All-China Research Association on Overseas Study (*Quan guo chuguo liuxue gongzuo yanjiu hui*), with Beijing and Qinghua universities as the leading bodies of the association. It holds annual meetings to analyze trends and suggest guidelines for work on overseas study and publishes a research magazine and yearly reports.

**Easing the process of returning**

Government policies now make returning less painful. In 1989, the Education Commission established 33 Overseas Study Service Centres (*Zhongguo liuxue fuwu zhongxin*) in 27 provinces and cities, to help returnees find jobs. The Investment Affairs Department at these centres helps overseas mainlanders invest in China or bring back technology. The state encourages cities to create schools for the children of returnees, whose weak Chinese language skills leaves them unable to compete with classmates whose parents had never gone overseas.

The Ministry of Personnel and the MOE established “post-doctoral stations,” as holding stations for overseas Ph.D.s who could not find jobs in China. As of 2002, there were 970 mobile post-doc stations (*boshi hou liudong zhan*) and 400 post-doc enterprise workstations (*qiye boshi hou gongzuo zhan*), employing over 7,000 post-docs. In 2002, the Minister of Personnel announced plans to double the number of stations and increase the number of post-docs to between 12,000 and 15,000.21

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The state simplified residency requirements and entry visas for overseas scholars who had taken foreign citizenship. The Foreign Ministry first gave these returnees longer-term visas. Shanghai was the first locality to experiment with permanent residence status for overseas scholars, which has since become national policy. Yet these people are ineligible for most preferential policies unless they renounce their citizenship. One returnee in Beijing was furious about this, because as a foreign passport holder, he could not apply for the “Hundred Talents Programme.” Yet when people question his patriotism, because he insists on keeping his Canadian citizenship, he reminds them that he chose to return despite a comfortable life in Vancouver.22

**Bringing people back for short term visits to “serve the country”**

The government now encourages people to return for short periods of time to engage in cooperative projects or give lectures. Through these visits, overseas scholars get a taste of how China has changed. The state hopes that such visits will encourage people to return permanently, but even if they only bring back new information or technology, or transfer information to other overseas scholars or graduate students about conditions in China, the state benefits.

The government began to encourage overseas scholars to return for visits in 1992, and between 1992 and 1995, the MOE helped over 1200 people “serve the country” in some form.23 In 1997, after a visit by mainland students in Germany, the “spring light project” (chun hui jihua) was established, offering funds for short-term visits.24 Apparently, the program pays only for one-way tickets, under the assumption that scholars with overseas positions can use their own research grants to pay for the return airfare.25 The first year, 600 scholars came on the program, and in 1998 funding was increased. In November 2000, a new program encouraged people to return during summer vacation and paid them as much as five times their overseas salaries. Between 1996 and May 2003, the MOE brought over 7,000 individuals and 50 groups of mainlanders back.

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22 Interview in Beijing, November 2004. Also, because he held foreign citizenship, he was not allowed to rejoin the Communist Party.


to “serve the country,” and in 2002 alone, the MOE awarded 14 projects under this program to seven universities for a total of 670,000 RMB. The “spring light program” is the forerunner of the concept of “serving the nation” from abroad (wei guo fuwu), rather than insisting that people “return to the country” (hui guo fuwu), another indicator of China’s learning process.

Local governments compete for global talent

Pressures on officials to enhance local economic development and a close link between the territorial government and local enterprises under its administration make local state leaders aggressive recruiters of overseas talent. Even in the wake of the Tiananmen crackdown, as central leaders engaged in a leftist binge, searching for class enemies at home and abroad, urban leaders looked for business opportunities to renew their stalled economies. Thus, inter-city competition emerged in the early 1990s and has continued unabated. Preferential policies, such as subsidized home purchasing, tax breaks on imported automobiles and computers, schooling for children of returnees, finding jobs for spouses, long-term residence permits, etc., are instituted by local governments in order to enhance their level of technical development. Personnel departments in these cities actively pursue overseas scholars, as do education and science and technology officials. In some cases, too many organizations engage in this arena, causing difficulties for returnees who do not know which way to turn. Cities send delegations overseas to seek talent; sometimes education officials in Chinese consulates only learn of these visits when they are reported in the local Chinese language newspaper.

Shenzhen instituted its own local policies only weeks after the Tiananmen crackdown. According to its August 1989 regulations, returnees could come directly to the Special Economic Zone (SEZ), legally change their residence and that of their families, keep any foreign exchange they earned in Shenzhen, even if they left the SEZ, buy a new

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26 “Chugu liuxue gongzuo jianjie” (A brief discussion of the work of sending people overseas), Shenzhou xueren, at http://www.chisa.edu.cn/newchisa/web/3/2003-05-23/news_46.asp. As of 2001, the reported number was 3000, suggesting that 4,000 had come in two and a half years. See http://www.why.com.cn/abroad_3/weiguofuwu/10_1/2.htm.

27 This is the website of Zhejiang University. See http://www-2.zju.edu.cn/zxw.

28 Interview in Shanghai with Ministry of Personnel, April 2002.

29 One overseas scholar said that he would never attend a recruitment talk by officials from small cities or counties as they cannot pay large salaries and their delegations are just junkets for local officials who use the idea of attracting overseas talent to spend public money on overseas travel.
house at near cost, establish private businesses, and “enjoy precedence over ordinary people with similar conditions and qualifications in the use of scientific and technological development funds.”

Weihai, on the coast of Shandong province, near South Korea, also used preferential policies to promote its interests. A 1992 document, in response to a central government policy, offered returnees a bonus of 500 RMB/month, which was separate from the bonuses that individual units were encouraged to grant. Returnees were eligible for a 20% housing discount, exclusions from import taxes, including taxes on autos; schooling was to be arranged for their children and a job for their spouse. Foreign income generated while working in Weihai could be sent overseas. Also, if the technology they brought back to China generated major economic or social benefits, their home unit was encouraged to give the returnee a large bonus.

Shanghai is the most successful city in recruiting returnees. To strengthen links with overseas scholars, the city’s Office of Overseas Chinese Affairs (Qiao ban) sought relations with overseas alumni associations from Shanghai universities by offering to strengthen them. They used the networks of existing overseas scholar organizations to collect information about new organizations. In response to efforts to shrink the government’s role, the Shanghai Education Bureau transferred the responsibility for helping returnees find jobs from the government to the marketplace by establishing a “human talent market” (rencai shichang). They also were among the first cities to establish long-term residence visas for returnees with foreign passports.

Cities establish incubators in their development zones for returnees, called “parks for overseas scholars to establish businesses” (liuxue huiguo renyuan chuangye yuan). These incubators are comfortable entry points for overseas scholars with few links in China, as officials there steer people through the maze of paperwork that otherwise might deter them from returning. Shanghai’s municipal government built four Centres for Returned Scholars in the city’s four development zones and by 1994, had attracted over 100 returned Ph.D.s to the Zhangjiang High Tech Zone.

By 1998, there were 14 such zones for overseas scholars, spread out

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around the entire city. Today, Beijing, too, has 14 such zones, competing with Shanghai in this respect.

On the negative side, local governments, or the companies that are the legal owners of the incubator, are often major investors in start-up companies, which can be a problem for returnees seeking separation from the state. Moreover, newly arrived returnees, more than local entrepreneurs, dislike having to work with the government. Still, more than local entrepreneurs, returnees are forced to turn to local governments for assistance as they start up their company.

### Institutional efforts to attract overseas talent

Universities and government-funded research units, particularly the Chinese Academy of Sciences (CAS), actively recruit returnees to their organizations. In 1978, the Ministry of Education (MOE) and CAS chose all the people who went overseas. Only after the central government decentralized control over educational exchanges in 1985 did individual universities become key players in sending people abroad. Moreover, after people graduated overseas, they had been expected to return to their home unit, so until the central government liberalized its policy, allowing returnees to switch jobs, these two organizations monopolized returnees as well.

The central government uses various programs to encourage key academic and scientific institutions to recruit overseas talent. For universities, the most important program is the Cheung Kong Scholars Programme (*Changjiang xuezhi jiangli jihua*), funded by Hong Kong tycoon Li Ka-shing. Between 1998 and 2004, it brought 537 scholars from overseas to become leaders in key research fields. When the central government dramatically increased its financial contributions to nine top universities, it insisted that 20 percent of those funds be allocated to improve the quality of the faculty—through importing talent from overseas.

As a result, many universities have programs to recruit overseas scholars. Shanghai Jiaotong University, one of the country’s pre-eminent universities, and a beneficiary of the MOE’s added donations to the top nine schools, established a new hiring system, which stressed the importance of overseas education; it also established a promotion system which

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includes overseas experience as a key criterion of promotion.35 Similarly, Shanghai University made spending time overseas a criterion for hiring and promotion.36

In December 1998, the MOE and 63 Chinese universities advertised in overseas editions of Renmin ribao (People’s Daily) and Guangming ribao (Guangming Daily) for 148 academics, known as “100,000-yuan professors.” Universities were to give these scholars first-rate research benefits to attract overseas talent and show returnees how welcoming China could be. Press reports noted that these 148 professors would “receive the highest salaries ever given since new China was founded.”37

This emphasis on global experience was at the heart of the Beida debate on educational reform, led in part by Beida’s returnee party secretary, Min Weifeng, a Stanford Ph.D. To meet Jiang Zemin’s call to turn Beida into a world-class university, he sought more and more returnees. By emphasizing the contacts that returnees can build overseas and the importance of working overseas, publishing in overseas journals, and teaching in a foreign language, Beida tried to force people educated locally to go abroad for some time.38 But Beida’s idea to fire faculty who did not gain foreign experience generated such a strong backlash that the overall reform plan at Beida has been cancelled.39

The Chinese Academy of Sciences aggressively pursues returnees through its “Hundred Talents Programme” (Bairen jihua), and competition among CAS institutes is quite keen.40 To get these fellowships, each institute writes a report to the Hundred Talents Program Office and the committee responsible for their speciality in CAS, outlining their overall development goals and how the fellowships will strengthen that plan. CAS then allocates a fixed number of fellowships to each institute. The institutes, then, advertise these positions in journals, such as Science or Nature. Candidates for the fellowship, if they are overseas, must return to China and present their research accomplishments or plans to a hiring committee at the institute, which decides whether to recommend the

36 Interview with a Vice-President of Shanghai University, November 2004.
37 Yang Gu, “Ph.D.s who have studied abroad vie for jobs,” Beijing qingnianbao [Beijing Youth Daily], January 10, 1999, pp. 1, 3.
39 Stanley Rosen, ed., Chinese Education.
40 Interview with an official responsible for personnel at CAS, December 2004.
scholar to CAS for approval. Apparently, CAS rarely denies any request, giving each CAS institute a great deal of leeway and authority.

Winners of the grants receive two million RMB, with which they usually start a laboratory, including buying equipment and hiring technical personnel; 20 percent of the funds can go to supplement their salary. Fellowship holders become Ph.D. advisors, giving them MA and Ph.D. students who can work in their lab. Awardees receive housing subsidies; a CAS institute in Changchun built 20 enormous apartments—the size of apartments allocated to central government ministers—for the recipients of this award as a further inducement to return to China. Recipients are very competitive for other fellowships as well, as the awarding of the Hundred Talents fellowship identifies them as high quality researchers.

Recently, state-owned enterprises (SOEs) have begun aggressively recruiting returnees, particularly in firms looking overseas for markets and resources. In December 2004, the State Assets Supervision and Administration Commission (SASAC), in cooperation with the Communist Youth League, held a job fair where 48 high-level SOEs, some of whom are now Fortune 500 companies, recruited people for 228 jobs and 57 projects.41 Returnees with foreign language skills and overseas work experience are in demand within this sector. Moreover, their salaries are becoming more competitive. Over 500 returnees attended this fair.

Do government efforts affect individual calculations?

Have state policies triggered the “reverse brain drain?” Or has the increase in returnees been largely the result of China’s growing market, shrinking opportunities in the West, and increased opportunities for talented people in China? This question can be answered only by looking at what brings people back to China.

But first we assess whether returnees are superior to people who never went overseas. Did they earn “transnational capital”—skills, technology, information, networks or capital derived from time overseas—and thereby increase their value relative to the locals? Or are they simply beneficiaries of a misguided policy that expends a great amount of resources to attract mediocre talent? Second, are returnees of high-quality relative to people who remain overseas? In other words, is China attracting mostly second-rate talent, while the best stay abroad? If true, then gain funding may be better spent elsewhere.

Evaluating the quality of returnees

Returnees seem to be of higher quality than people who have not gone abroad. Various surveys show that, in universities, research labs, and science parks, returnees possess skills, information and research methodologies generally unavailable to people who have not gone abroad. They have stronger global networks. They receive more grants and fellowships. They publish more articles in international journals. Yet, many of these returnees got overseas because they were more talented than people who stayed behind. So, a selection biases affects these findings.

Returnees in the private sector often bring back high-level technology unavailable in China, promoting China’s technological development and allowing them to earn large profits in the domestic economy. A 2002 survey among 154 returnees and locals in high tech zones in six cities in China found that 48 percent of returnees had imported a foreign technology as compared to 21 percent of locals. A survey in summer 2004 supported those findings: when we compared 100 returnee entrepreneurs and 100 local entrepreneurs from Shanghai, Beijing and Guangzhou, returnees were four times as likely as locals to possess the “latest international technology” (34% vs. 9%), and almost 50% as likely (46% vs. 30%) to have technology that, “while not the newest internationally, is new for China.” Moreover, the opportunity to benefit from that technology in China brings many people back. When asked why they returned to China, 27% of returnee entrepreneurs selected—“I have a technology that I believe will have a good prospect in China”—as their primary reason for returning. Another 28 percent chose it as their second reason.

As to the quality of returnees relative to those who stay abroad, the dominant view is that the truly talented people stay abroad, even though some very talented people have returned. The director of a research institute under the Chinese Academy of Sciences placed most returnees in the top 50%-80% of overseas scholars, arguing that the top 20% remain overseas. As of 2003, the High Energy Physics Laboratory under

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43 Zweig, Chen and Rosen, “Globalization and Transnational Human Capital.”

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CAS had failed to attract back anyone with a Ph.D. They had either stayed abroad or gone into business in China. This position is supported by Dr. Rao Yi, a professor at Washington University in St. Louis and an advisor to CAS, who argued that in terms of international reputation and prestige, few academic returnees are comparable to those who stay abroad.\(^46\) He estimates that perhaps 800-1,000 life scientists of Chinese origin run independent labs in the U.S. Also, getting people to return is one thing; getting them to stay is another. A returnee to a CAS institute, with stellar publications, had received a “Hundred Talent’s” fellowship, excellent housing and a fellowship for his wife. However, he was uncertain if they would stay in China. Finally, there are reports that the quality of people accepted by CAS under the Hundred Talents Program (\textit{bairen jihua}) is decreasing.

Returnees to CAS interviewed in 2002 had not been particularly successful overseas. Table 1 lists some of our findings.

\textbf{Table 1 Evaluating the quality of returnees}

- Only 2/82 scientists interviewed in Changsha, Guangzhou, Wuhan and Kunming, earned over US$50,000/year on the eve of returning; another three earned US$35,000-$49,999.
- Very few had patents, despite the fact that 17 of them had earned Ph.D.s overseas.
- Among 109 academics interviewed in 2002, only eight had left behind salaries of over US$25,000/year, while 77% of them earned under US$12,500/year.

So, very few of them were leaving stable academic positions to return to China. In fact, unlike most academics who went abroad from China,\(^47\) our academic returnees had not been looking for opportunities overseas; 91% of them reported that they had always intended to come home after fulfilling their program. Therefore, one might assume that these were not the most talented or entrepreneurial people.

Our academic returnees did have valuable skills. And while 19% of them reported that the research area that they had developed overseas was in great demand in China, 9% of locals expressed the same view; but the finding for this question was not statistically significant, suggesting that


\(^{47}\) Among 272 people who we interviewed in the U.S. in 1993, only 28% reported that when they left China they had “definitely planned to return after their studies.” See Zweig and Chen, \textit{China’s Brain Drain}, 1995, p. 130.
our returnees are not more likely than people who have not gone overseas to possess skills that are in great demand. They are also not more likely to import technology, nor to have that much better publication records. While 28% of our returnees had published articles in overseas journals, so had 22% of locals.

Still, local academics admit that returnees demonstrate more positive work results than themselves. When asked to compare their own accomplishments (gongzuo de chengguo) with those of returnees, 2 percent of locals believed that returnees produced much more (duo de duo), while 51% believed that they produced “somewhat more” (duo yixie). Given that the local academics interviewed in these schools strongly believed that returnees got much more research funding and much better housing than the locals, we must assume that the returnees really were producing more.

The role of government policy in creating the reverse tide

Did government policy attract talented people to return? Our 1993 survey shows the issues that stopped people from returning (table 2). Political instability had been important, reflecting decades of political campaigns and the army’s assault on Tiananmen Square on June 4th 1989. A political variable we created, which combined the effects of the Tiananmen crackdown on their decision to return, as well as their trust in the government’s assertion that it would let people “come and go freely” (lai qu ziyou) which became official policy in 1993, was a statistically significant explanation of people’s attitude about returning in our 1993 survey. At that time, people also complained about the lack of quality equipment and difficult work conditions, as well as the inability to develop their own career. However, our conclusion to that study suggested that if China could remain politically stable and develop its economy, 20 percent of overseas scholars might return to China if conditions warranted it. As we wrote in 1995, “As economic and social conditions liberalize and improve, if China’s government becomes more proactive in recruiting, and if the post-Deng era proves to be relatively stable, Chinese students and scholars will return to their homeland in larger numbers than today.”

48 See David Zweig and Chen Changgui, China’s Brain Drain to the United States: Views of Overseas Chinese Students and Scholars in the 1990s, (Berkeley: Institute for East Asian Studies, China Research Monograph Series, 1995).

49 Zweig and Chen, p. 86.
<table>
<thead>
<tr>
<th>Choices</th>
<th>Rank (1st choice)</th>
<th>Frequency</th>
<th>%</th>
<th>Rank (2nd choice)</th>
<th>Rank (3rd choice)</th>
<th>Combined Rank*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Lack of political stability</td>
<td>1</td>
<td>76</td>
<td>27.8</td>
<td>5</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>2) Lack of political freedom</td>
<td>2</td>
<td>31</td>
<td>11.4</td>
<td>2</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>3) Fear of being arrested</td>
<td>11</td>
<td>3</td>
<td>1.1</td>
<td>15</td>
<td>11</td>
<td>15</td>
</tr>
<tr>
<td>4) No chance to change jobs</td>
<td>6</td>
<td>15</td>
<td>5.5</td>
<td>6</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>5) No opportunity for career advancement in China</td>
<td>3</td>
<td>29</td>
<td>10.6</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>6) Poor work environment</td>
<td>4</td>
<td>21</td>
<td>7.7</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7) Lack of modern equipment</td>
<td>7</td>
<td>14</td>
<td>5.1</td>
<td>9</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>8) Low living standard</td>
<td>5</td>
<td>19</td>
<td>7</td>
<td>4</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>9) Family does not want to return</td>
<td>12</td>
<td>2</td>
<td>0.7</td>
<td>12</td>
<td>12</td>
<td>14</td>
</tr>
<tr>
<td>10) Difficulty getting out the time</td>
<td>9</td>
<td>8</td>
<td>2.9</td>
<td>10</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>11) Returnees seen as failures</td>
<td>10</td>
<td>6</td>
<td>2.2</td>
<td>13</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>12) Fear not being able to get out a second time</td>
<td>9</td>
<td>8</td>
<td>2.9</td>
<td>7</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>13) Better future for children overseas</td>
<td>8</td>
<td>9</td>
<td>3.3</td>
<td>8</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>14) Difficulty competing with children in China</td>
<td>13</td>
<td>1</td>
<td>0.4</td>
<td>14</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>15) Few suitable jobs given education and training</td>
<td>11</td>
<td>3</td>
<td>1.1</td>
<td>12</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>16) Few exchanges with international scholars</td>
<td>10</td>
<td>6</td>
<td>2.2</td>
<td>11</td>
<td>2</td>
<td>11</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>n/a</td>
<td>251**</td>
<td>91.9%</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
</tr>
</tbody>
</table>

NOTE: * Score based on the sum of 1st, 2nd, and 3rd choices (1st choice= 5, 2nd choice=3, 3rd choice=1).
** 22 (8.1%) no response

Clearly, many problems have been addressed, if not quite resolved. China’s political scene has remained relatively stable, as witnessed by the passing of the political torch from Deng Xiaoping to Jiang Zemin, and then to Hu Jintao. Most returnees see China as an excellent place to develop their talent. The growth of the private sector and the expansion of China’s market has attracted large numbers of returnees. Interpersonal relations within work units remain a major problem; but this problem is as much cultural as it is institutional, and so remains somewhat beyond the governments reach. But more private sector firms will weaken this negative aspect of working in China. Low salaries and difficulties maintaining contact overseas also confront returnees. But people who return with a large fellowship, such as those granted under the Cheung Kong Scholars or the Hundred Talents Programme, do not face these problems. Therefore, these fellowships may have increased the quality of returnees, as the theory would predict.

In terms of creating a favourable atmosphere through various reforms, our findings show some government success. When asked why they returned, only two scientists selected “changes in the domestic environment” as their first reason for returning. However, as table 3 shows there has been some government success.

Table 3  Why scientists return: Indicators of government success

- 18 of 82 (22 percent) chose “changes in the domestic environment” as their second reason for returning;
- “the freedom to come and go”: first choice of 3 percent, second choice of 10 percent, and third choice of 10 percent;
- Political stability: second choice of 7 percent; third choice of 3.4 percent;
- “changes in how the government uses people” (yong ren zhengce): third choice of 9 percent.

Source: Interviews with CAS Scientists, 2002 and 2004, N=86

However, asking the question differently increased the government’s role. We asked people to select from a list of reasons as to “why the number of returnees has increased” (table 4). They could select more than one reason. While 58% chose China’s rapid economic development, 47% selected “good government policy,” and 42% believed they had a good opportunity to develop new technologies in China. Among respondents, 32% chose “hard to find good opportunities overseas,” while 31% referred to a glass ceiling overseas for Chinese. Finally, 19% selected
political stability in China. Clearly some of these people believe that good government policy is important, and that the government’s role in increasing political stability deserves recognition.

Table 4 Why has the number of returnees increased?

- China’s rapid economic development 58%
- good government policy 47%
- good opportunity to develop new technology in China 42%
- hard to find good opportunities overseas 32%
- glass ceiling overseas for Chinese 31%
- political stability in China 19%

Source: Interviews with CAS scientists, 2002 and 2004, N=86.

Yet people thought the government could do more. When asked what the government should do to increase the return rate, people chose: developing the economy, improving policies towards intellectuals, expanding democracy, fully utilizing people who had already returned, and investing more in science and education, in that order. Table 5 shows the results of that question.

Table 5 What should the government do to encourage more returnees?*

<table>
<thead>
<tr>
<th>Policy Options</th>
<th>1st Choice (%)</th>
<th>2nd Choice (%)</th>
<th>3rd Choice (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Develop the economy</td>
<td>31.2</td>
<td>6.5</td>
<td>7.8</td>
</tr>
<tr>
<td>2. Expand democracy</td>
<td>15.6</td>
<td>25.9</td>
<td>7.8</td>
</tr>
<tr>
<td>3. Improve policy towards intellectuals</td>
<td>23.9</td>
<td>16.7</td>
<td>34.0</td>
</tr>
<tr>
<td>4. Invest more in science and education</td>
<td>10.1</td>
<td>23.1</td>
<td>15.5</td>
</tr>
<tr>
<td>5. Liberalize policy on overseas studies</td>
<td>4.6</td>
<td>14</td>
<td>9.7</td>
</tr>
<tr>
<td>6. Fully use people who have returned</td>
<td>14.7</td>
<td>11.1</td>
<td>21.4</td>
</tr>
<tr>
<td>7. Other</td>
<td>0.0</td>
<td>2.7</td>
<td>3.8</td>
</tr>
</tbody>
</table>

Note:* People were asked to select from the above list in response to the question: “What is key to attracting more people to return to China?”
Source: Survey in 2002.

Similarly, when asked what the state should do “to allow returnees to utilize their talents fully” (fahui tamen de zuoyong), 59% felt the government needed to improve its policies towards people with talent. In this
case, improving government policy was much more important than “increasing research funding” (22%) or “raising salaries” (17.4%).

Still, there are many people living overseas who would not set up a company in China, let alone move back. Using data from a survey in Silicon Valley in 2001 among Chinese entrepreneurs, we can see that the relationship with the government can be problematic. Table 6 shows that government bureaucracy and regulations are the most important reason why people would not start a business in China (58 percent). China’s inadequate legal system ranks second (50 percent), and political instability ranks third (38 percent). These are all issues that the Chinese government can address, and in fact, since China joined the WTO, the power of approval of many government bureaus has been taken away, significantly decreasing the level of government interference in business relations. Of the key problems listed by 31 firms who had established firms in China, bureaucracy/regulation was the most common problem (16/31), matched by the immature nature of the Chinese market (16/31). Still, 6 of the 31 people who had established businesses in China cited financial incentives from the government as one of three factors influencing their decision to set up a business in China. Finally, since returnees or overseas scholars are outsiders to China, 37.0 percent of people selected “unfair competition” as one of the three reasons for not starting a company in China.

However, government policy to invest in scientific institutions has a very important indirect influence. Interviews by the author in fall 2004 show that increased funding for the Chinese Academy of Sciences has rejuvenated some institutes. Two units where we did interviews had declined due to the aging of their leading researchers. The Cultural Revolution stopped China from training a new generation of scientists, creating what some call a “talent fault,” and many of those trained after it, including the best or even second best, had gone abroad. Only money and opportunity will bring them back. Thus one institute, which had

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50 Among three reasons why Chinese help their country from overseas are positive conditions for establishing enterprises created by China’s rapid economic development and political stability. Chen Changgui and Liu Chengming, Rencai: hui gui yu shiyong (Human talent: Its return and use) (Guangzhou: Guangdong People’s Publishing House, 2003), pp. 183-184. In 1993, over 30 percent of respondents interviewed by Zweig and Chen cited political instability as a key reason for not returning to China. Zweig and Chen, China’s Brain Drain to the U.S. Recent interviews in the U.S show that instability still affects decisions about returning. Interview by Stan Rosen in Los Angeles.

51 See Bihui Jin, Ling Li and Ronald Rousseau, “Long-Term Influences of Interventions in the Normal Development of Science: China and the Cultural Revolution,” in Journal of the American Society for Information Science and Technology, 55 (6): 544-550. See also Cong Cao, China’s Scientific Elite (New York: Routledge-Curzon, 2004), pp. 47-49. According to Cao, China lost at least one million undergraduates and 100,000 graduate students to the Cultural Revolution. p. 49.
Competing for global talent

received funds for 18 “Hundred Talents” fellowships over two years, had attracted a large cohort of young and middle-aged Ph.D.s trained overseas. However, few of these returnees had been directors of institutes overseas; many were post-doctoral fellows, or assistant professors.

Conflict generated by preferential policies

Government efforts to promote a return wave can create problems. Granting returnees preferential policies creates bad blood between returnees (commonly called the “hai gui pai” or “returning sea turtles faction”) and people who have not gone overseas (“tu bie pai” or “land turtle faction”). Articles in the press and on websites in China refer to this confrontation. The decision of units to favour “outsiders” who have studied overseas over long-term members of their unit who have not been abroad has been criticized as “giving up a son to get a son-in-law.” In fact, at a meeting of academicians of the Chinese Academy of Sciences, Premier Wen Jiabao reportedly warned against overemphasizing the role of returnees.

Table 7 shows the different views among returnees and locals towards government policy.

Among academics, locals more than returnees, thought that the government overemphasized returnees. Similarly, more locals than

Table 6 Why people would not set up a company in China (top 3 reasons)

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government bureaucracy/regulation</td>
<td>57.5%</td>
</tr>
<tr>
<td>Inadequate legal system</td>
<td>50.0%</td>
</tr>
<tr>
<td>Political or economic uncertainty</td>
<td>38.3%</td>
</tr>
<tr>
<td>Unfair competition</td>
<td>37.0%</td>
</tr>
<tr>
<td>Immature market conditions</td>
<td>32.9%</td>
</tr>
<tr>
<td>Unreliable infrastructure</td>
<td>19.9%</td>
</tr>
<tr>
<td>Lack of access to capital</td>
<td>18.4%</td>
</tr>
<tr>
<td>Poor business services</td>
<td>16.6%</td>
</tr>
<tr>
<td>Inferior quality of life</td>
<td>13.0%</td>
</tr>
<tr>
<td>Poor quality of manpower</td>
<td>5.2%</td>
</tr>
<tr>
<td>Rising cost of labour</td>
<td>1.8%</td>
</tr>
</tbody>
</table>

Source: Data collected by Anna Lee Saxenian, funded by Public Policy Institute of California.
Note: Data was collected in May-June 2001 N=368. We reanalyzed her data set.

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returnees felt that the latter got “much more” research funding; “much better” housing; and, “much faster” promotions. Among scientists, almost three times as many locals than returnees were not very satisfied with their housing, while 50 percent more locals than returnees felt that returnees got much more research money. More than twice as many locals versus returnees thought returnees were promoted much faster, 21 percent of locals versus 16 percent of returnees felt that the state’s emphasis on returnees was too high.

The animosity between the two groups became clear during interviews in a university in China’s southwest. Locals uniformly felt that returnees to the university were not very special, while some locals were very good. Yet the university only helped returnees buy housing, get money to settle on campus (anzhuang fei), and start their research. This situation may be common in border regions, or parts of China where only overseas scholars who were originally from the locality are willing to return. Such schools cannot attract talented people from other regions. But the locals may have gone to very good schools in China—in this case several Ph.D.s were from Qinghua University and the Chinese Academy of Sciences—and therefore were not inferior to some, if not many, returnees. Yet across the board, returnees got preferential treatment.

In the two institutes in the Chinese Academy of Sciences, there was less hostility about the favouritism that returnees received. This was partly because returnees had reinvigorated the institutes. However, one local Ph.D. complained about housing—he lived in a small, two-bedroom

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Table 7 Views on returnees: Comparing locals and returnees

<table>
<thead>
<tr>
<th>Among Academics</th>
<th>Locals</th>
<th>Returnees</th>
</tr>
</thead>
<tbody>
<tr>
<td>The government overemphasized (tai zhongshi) returnees</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>Returnees got “much more” (duo de duo) research funding</td>
<td>19%</td>
<td>3%</td>
</tr>
<tr>
<td>Returnees got “much better” (bao de duo) housing</td>
<td>14%</td>
<td>2%</td>
</tr>
<tr>
<td>Returnees got “much faster” (kuai de duo) promotions</td>
<td>19%</td>
<td>2%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Among Scientists</th>
<th>Locals</th>
<th>Returnees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very satisfied with their housing</td>
<td>41%</td>
<td>15%</td>
</tr>
<tr>
<td>The housing for returnees was much better (bao de duo)</td>
<td>18%</td>
<td>4%</td>
</tr>
<tr>
<td>Returnees got much more (duo de duo) research money</td>
<td>29%</td>
<td>18%</td>
</tr>
<tr>
<td>Returnees had been promoted much faster (kuai de duo)</td>
<td>28%</td>
<td>12%</td>
</tr>
<tr>
<td>The state’s emphasis on returnees was too high (tai gao)</td>
<td>21%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Note: N= 86.
apartment, while returnees had been subsidized to buy new large apart-
ments. Second, the state had not promoted domestic talent, due to its
concerns with returnees. And while he felt that bringing in overseas talent
was sound policy, it harmed the work enthusiasm of the locally trained.
“My heart is not stable,” he asserted, and he believed that all locals felt
like him.

Even returnees believe that promoting all of them to full professor
immediately upon their return was short sighted, even though all returnees
insisted on it. Many returnees, having just completed a post-doctoral
fellowship under their thesis director’s supervision, had yet to prove
themselves capable of independent research, let alone leading others in
research. According to one returnee, “we can offer little in terms of
research environment, so we give them an empty title of ‘professor.’ This
is our bargain with them, but it is not healthy, as they haven’t proven
themselves yet.”53 But once promoted to full professor, they are very dif-
ficult to remove, so if they do not perform, the unit is stuck with them
for a lifetime. Also, with the number of positions fixed in many units,
“granting this title too quickly can change the dynamic of a research
institute.”

Conclusion

The Chinese government, at all levels of the system, has invested a
great deal of time, energy and capital to attract overseas academics and
businessmen to return. New government organizations, particularly
related to the Ministry of Education, the Chinese Academy of Sciences,
or the State Science and Technology Commission, established numerous
programs to advance this goal. These extensive efforts are due in part to
China’s sensitivity about “face”—when people do not return, it harms
China’s reputation. But more importantly, China needs talented people
and government leaders know it. They recognize that they cannot pre-
vent talented citizens from going abroad, either to study or work, so the
state must find ways to compete for that talent and bring its own people
back. To achieve this, the central government has endeavoured to trans-
form the overall domestic political, administrative, and economic envi-
ronment, while cities themselves compete aggressively with each other by
providing myriad incentives of their own. And though problems remain,
China is experiencing a significant “return wave.” Political stability,
improved housing, better business opportunities and a more vibrant private sector, more modern equipment and management procedures, higher salaries and special incentives all improve this environment.

Market forces, facilitated by national government reforms, are the most important factor bringing people back in the private sector, as a tremendous market awaits those who learned a valuable skill or received access to advanced technology while overseas. Overseas mainlanders know the opportunities or “rents” that await them in the domestic economy if they return. Also, China has created an environment conducive to foreign direct investment which has attracted many multinational companies (MNCs), creating excellent jobs for overseas mainlanders who return. But the Chinese Academy of Sciences seems to be succeeding as well, although there are questions about the quality of their talent.

Our findings also suggest that returnees are better than those who did not go abroad, although it was often the more talented who went overseas in the first place. Thus funds expended to bring people back are not wasted. But most returnees we interviewed had been on soft money overseas on the eve of their return; few gave up very successful careers to return. Nevertheless, extensive government efforts and new funding programs have meshed well with the growing interest of many people to return to China. The result of this synthesis—a “reverse brain drain”—could transform China's scientific, academic and business communities in the coming decade.