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從台灣人才外流現象探討人才危機

Brain Drain and its challenge to Brain Crisis in Taiwan.

Student: Chien-ming Tsen 曾建銘

Advisor: Dr. Mei-chun Liu 劉梅君博士

中華民國 102 年 2 月

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Acknowledgement

There is an old saying that "Squatting lower is in order to jump higher in the future". Facing the past life of various combat and tests, I learned to grow and thrive. Say goodbye to the shadow of the past, I restart to live a new life. Living in the era of filling trials and challenges, no one can be success alone. I have spent nearly four years under the limited time to complete the study that it was not easy to overcome all difficulties. It is really appreciated that a lot of friends giving me a hands.

I would like to thank many friends sincerely. In addition to my family, I do appreciate some of my friends Wei Wan-Rong, Chang Yi-Ming, Chang Hon-Fu, Tsai Ding-Jou, Ju Jia-Hua, Chen Chih-Chi, Li Cheng-Huei, the juniors of the Institute of Labor Studies, Assistants, of the Asian Pacific English Master Program, NCCU and Chung Yuan Christian University Library. Moreover, the Professors of Chang Chi-Heng and Huang Te-Pei gave me a lot of suggestions in the process of presentation. One of the most important professors who I would like to acknowledge is my supervisor, Liu Mei-Chun. Without her earnest guidance, selfless-love, tolerance and understanding, I could not complete the thesis and publish in time. She is the best mentor who I have ever met in my life. Thank God for everything!

During these four years, I have learned and experienced the happiness, belonging, and identity when I studied in NCCU. I am pleased to be able to complete school education in NCCU. However, "Life is short, learning is limitless". Facing the rugged and challenging future, I will keep the original intention of the responsible attitudes to overcome all test.

Abstract

The Government has repeatedly stressed through the media that Taiwan is facing a brain drain crisis. Taiwan will become a "third-level countries" if the Government does not take any immediate measures. There are over a million people with bachelor, master or Ph.D. degrees in Taiwan and 164 universities provide higher education cultivation. Thus, higher educational gets very common among younger generations and becomes universally accessible. Is Taiwan really facing a talent crisis? However, enterprises are short of workers. The government is currently encountering both talent crisis and the unemployment crisis.

The migration of talent is a world trend in which talent flow can enhance and promote social and economic development. The United States, Europe, Japan and other developed nations do not worry about the problem of brain drain. Is brain drain caused by the talent crisis or the talent crisis led to brain drain? It seems the main problem is Taiwan faces talent crisis. This study aims to explore the issue of brain drain by examining current situations and critically discussing government policies.

Firstly, this study will address and collect the relevant theories and literatures to provide a comparative analytical schema of the problems. Afterward, according to the historical data collection and consolidation, a comparative analysis of research is done through literature review. This study will discuss the status and practice of talent recruitment of China, Korea, Hong Kong and Singapore in a systematic way. Moreover, industrial restructuring poses challenges to the human resource strategies of research, enterprise, and higher education with regards to talent "Incubation (育才)", "Maintaining (留才)", and "Recruiting (攬才)". In sum, statistic data and Government policies were investigated and evaluated to find out solutions to talent crisis in Taiwan.

Keyword: Brain Drain, Talent, Incubation, Maintaining, Recruiting

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Chapter 1 · Introduction

In the past, Taiwan, a small country, manufactured a number of products that are the first in the world. Taiwan is considered the most outstanding electronic technology producing country, which has created an economic miracle that tided over Asian financial crisis. However, the economic growth could not sustain as the result of overhaul of global economic structures and technology development during the past ten years. Furthermore, Taiwan faced serious human resource shortage comparing to China, Korea, and Singapore. The competitiveness of Taiwan is gradually behind because of human talent loss. This Government should pay more attention on this problem, and take policies to effectively address the worsening "brain drain"¹ situation.

"Human Capital" represents a national "soft power", which is the key to competition. Korea Samsung President Lee Kun-Hee (李健熙) said: "A genius can feed 1 million people"². It is clear that Korea Government considers the national development not possible without talent. In addition, the Chinese Government aims to go from the "human resource state" to the "talent state"³ with talent-hunting plans in order to mitigate the talent countercurrent. In addition, China began to implement "The thousand people plan" at the end of 2008 that aimed to recruit talent, cultivated brains by enhancing education quality and implemented talent-hunting project to uptake 2000 overseas high-tech scientists, higher-level management talent and entrepreneurs who are willing to return to China. China expects to

¹ The Dictionary of Modern Economics, edited by D. W. Pearce (1981), The Macmillan press, London. Brain Drain means the migration of educated and skilled labor from poorer to richer countries. Education skill, which represents investment in human capital, is usually cheaper to acquire in poorer, labor abundant countries, since its provision is usually a labor intensive activity. Those with the skills or education then move to more developed countries where the return to their human capital is higher. Such migration is often encouraged by laws and institutional factors, as most countries look more favourably on immigration by those with skills than those without.

² 聯合報，〈韓攬才政策／有一個天才 就可養活百萬人〉，2012年6月22日。

³ 天下雜誌，〈花大錢、給舞台 搶世界人才〉，2012年9月20日，第481期

transform 230 million farmers and non-skilled workers to be skilled workers and professionals in 2020.

The PRC Premier Wen Jia-Bao(溫家寶) stated at "Twelve-Five(十二五)" in the Government report an important declaration which called attention to the emphasis on discipline construction and speeding up the upgrading of a group of excellent universities. A comprehensive project to strengthen training programs for high-level and high skills talent aims to create a large number of technological innovation talents to meet the shortage of talents during 10-year implementation plan of national medium-term and long-term talent development. It will cultivate 42 million business management experts, 3.8 million research personnel people, 4 million innovation technological experts and 8 million medical experts as the cultivation target.

Taiwan suffers more threats and pressure when facing the aggressive talent hunting project from China. Thomas Friedman, a famous columnist of the New York Times in the United States, noted on April 2012 by pointing out the fact that even though Taiwan lacks natural resources, the performance and achievements of skilled experts⁴ of this island is quite impressive. However, the gradual loss of competitive advantage due to the lack of professional experts looms large. Wong Chi-Huey's (翁啟惠), the Academia Sinica President, offered the Government with a proposal in 2011 called "Declaration of human talents" to call attention to the issue of the human talent shortage. In April 2012, Tharman Shanmugaratnam, Singapore Vice-Prime Minister⁵, made negative comments on Taiwan's human talents while

4 台灣經濟研究院院長洪德生，《檢視我國人才流失問題(卓越雜誌文稿)》，2012年6月1日。

5 新加坡海峽時報，《人才閉關將重演台灣故事》，2012年4月6日。At the forum of the National University of Singapore, April 4, The Singapore's Deputy Prime Minister Tharman Shanmugaratnam said that the decline in the average salary of the Taiwanese because the closed-door policy adopted for the foreign talents that simultaneously the best and brightest talents in Taiwan relocated to China, the United States and other countries.

our Minister without Portfolio, Guan Zhong-min (管中閔) also warned that Taiwan faces serious problems of human talent shortage and shall know the importance of recruiting international skilled persons.



Section 1 、 Background

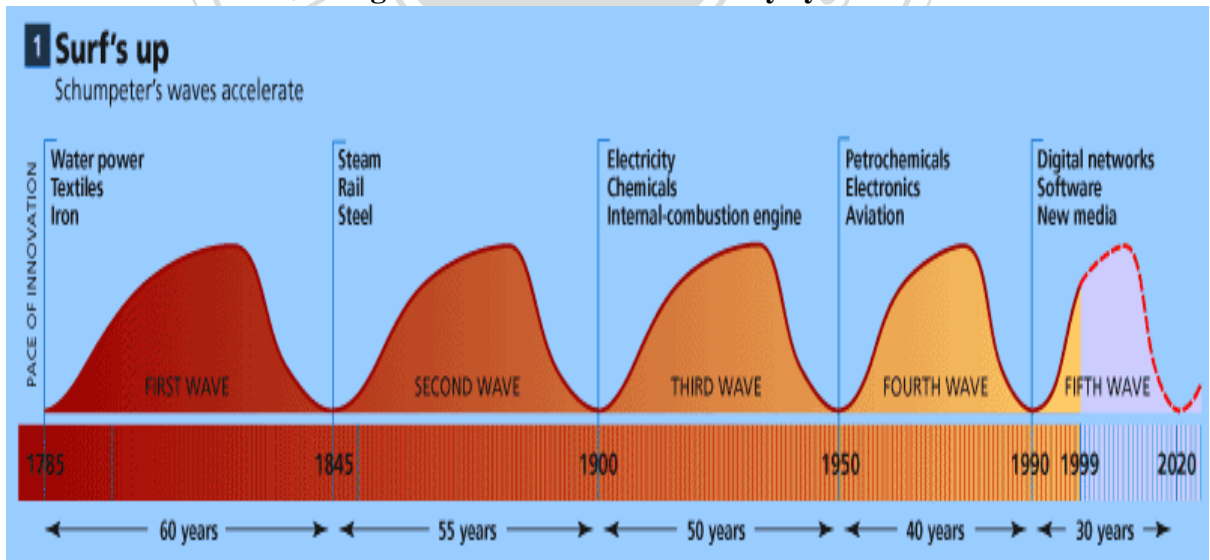
From the view of the human development history, the industrial revolution began rendering "Surf's up type" evolution since the 18th century (Table-1 Recession Cycle from 1785 to the 21 Century). With the invention of the steam engine and machine that replaced human power, human life had a huge evolution from agricultural type to post-agricultural one that speeded up the progressive period. Since then, the computer invention and telecommunication in 1970 moved the global economic development to an innovative stage that generated many financial giants and entrepreneurs. Because of the human greed and manipulation, the world suffered a series of economic crises in the past two centuries, such as the Great Depression of 1930s, the oil crisis of 1970s, the Internet Bubble of 1990s, 2008 Lehman Brothers bankruptcy resulting in the emergence of bank closures and the 2011 debt crisis. The global economic downturn cycle with the trend of globalization suggested that the economic cycle shortened (Figure-1 The economic recovery cycle) and the recovery time gradually elongated. The phenomenon of the economic downturn will be the norm in the future and people should seek new economic solutions.

Table-1 Recession Cycle from 1785 to the 21 Century

Recession Cycle		Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
Era		1785-1845	1845~1900	1900~1950	1950~1990	1990~2020
Duration (years)		60	55	50	40	30
Industry	Energy	Waterwheel · Water Conservancy	Vapor	Internal-c ombustion engine		Energy Technolog y (energy-co nservation)
	Mental	Iron	Steel			
	Biochemi cal	Textile	Textile	Chemicals (Nylon products)	Petro-che micals	
	Media		Railway News	Telegram. Telephone	Telecomm unications industry (e-mail)	Digital network (Software. Search engine)

Ref Resources: The organization by myself

Figure-1 The economic recovery cycle



Ref Resources: Vanderbilt University

In 1980, the information revolution brought sweeping changes to the world. Even the United States who commands the world supremacy, also made great efforts recruiting human talents by adopting openness-inclusive policy. Anyone who meets the required qualification is the target of recruitment. This open-up policy made USA a superpower in science and technology, culture, and economy. After the Iran-Iraq war, the 911 terrorist attacks, the collapse of Lehman Brothers in 2008, and the European debt crisis in 2011, the United States still pursues the next trends of the industrial development such as energy-saving, bio-tech, high technology to seek new economic growth opportunities as the force of the economic recovery. United States, full of human talents, still recruits more and more capable human resources because she believes "Those who are able to master the key technologies will be able to make smooth and successful transition and dominate the global power". Even as the top super power nations, the United States and China are urgent to recruit human talents, while Taiwan, only a small island without natural resources, faces talent crisis that is more serious than other countries.

After the 2008 financial crisis, the global forecast is that the Asia-Pacific region will become the major focus of future development and the most competitive region for the demands of human talents⁶, in which China has the most aggressive attitudes. The former President of the Communist Party, Deng Xiao-ping, decided the reform and opening-up policy in the "the 11th plenum" of the Chinese Communists in 1978 that speeds up the growth of China economy and the GDP growth rate is 10% annually. The achievements include not only the infrastructures such as railway, highway, or airport construction, but also the "211 project(211 工程)", "985 project(985 工程)" and the "Thousand person plan(千人計劃)", which are positive developments of software construction and layout. After the Global

⁶ 翁啟惠，中央研究院，《人才宣言》，2011年。

financial crisis in 2008, China used the policies of "Loose Currency(寬鬆貨幣)", "Cars to the countryside(汽車下鄉)" and "Electronics to the countryside(家電下鄉)" to expand the domestic demands and tided over the crisis smoothly. European debt crisis in 2011 slowed down economic growth rate as a result of decreasing the consumption and expenditures. Moreover, the productions of Chinese enterprises over-supply and environmental awareness is raised. The Chinese Government asked the enterprises to upgrade under "Empty new Cage for new birds (騰籠換鳥)" policy. The Communist Party began to pay attention to talent-cultivation and recognized the importance of the change that the human resources in the future have to be transferred from the "Human Power" toward the "Human Talents", hoping to gain access to the key technologies and high-tech talents, so that China could seek the new leading position among economic superpowers. In addition, Singapore, Hong Kong, Korea and other East Asian countries or regions have the talents competition war through substantially changing the national laws and policies to recruit more capable human resources.

In the past, the talent-cultivation in Taiwan started from Li Kwoh-ting (李國鼎) and Premier Sun Yun-Suan (孫運璿) who had the insights with the precision vision and active attitudes. In the period of 1970', the government promoted the excellent talents to the western countries for advanced study in order to learn new knowledge and technologies, or through the domestic cultivation of excellent universities to produce talents such as technological specialists of Lin Bai-Li (林百里), and Stan Shih (施振榮), or through the patriotic sentiment to recruit the world outstanding scientists back to Taiwan such as Morris Chang (張忠謀) and Lee Yuan-tseh (李遠哲). Taiwan economy rendered in the high-speed growth, not only in terms of economic performance as the first among "Asian Tigers (亞洲四小龍)", but also creating the "Economic Miracle" that won global awareness of Taiwanese tenacity and diligence.

Currently, Taiwan's economy under the global interaction effect, has negative growth and unemployment problem so that economic issue as well as talent issues become a high concern, especially when the East Asian countries strongly compete for the talents through attracting salaries. However, the talent-hunting policies in Taiwan comparing with other countries seems to be slightly weak, and worse still is the education reform that seemed to fail its mission. Moreover, Taiwan research environment is not international enough and The incentives of headhunting are not attractive enough, which result in losing the talents and have enormously impact on the country's future development.

During the financial tsunami and economic crisis, every country finds the solution eagerly and new economic growth factors. The talent hunting will become the most important trend in the world. However, Taiwan's society faces the dilemma of economic stagnation growth and industrial restructuring has not much progress. Our Government would like to solve the manpower problems through the National Science and Technology Conference to exchange the opinions with the proposed solution from the industries, governments, academia researches. The Government expects to make some important instructions for the personnel policies of shortening the differences of learning and training programs, the program of the economic momentum and the golden ten years in the 20th presidential speech on May 2013.

The only way is to adjust the steps as soon as possible to stop quarrelling between the politics and work together making efforts for the future and strengthening the talent cultivation and recruiting. If the government policy direction is correct, people should cooperate to overcome the current national embarrassment and create a new economic miracle.

Section 2 、 Study motivation and purpose

1.2.1 Study motivation

Guan Zhong-min, the Chairman of National Science Council, recently pointed out the topic of "how to face the Taiwan talent crisis" in Science and Technology Development Advisory Parliament that faced four crises⁷ including "the differences of talent supply and demand", "too rigid of the education institutions", "the inconsistent occupation needs with talent cultivation" and "the loss of international talent competition". If Taiwan does not address this dilemma, it will become the next Philippines as the "three-level country" within 3-5 years. For this phenomenon, the Government should pay more attention on this issue. Under the globalization, this smoke-free war of the human talents completion has spread around the world, particularly in China, Singapore, Hong Kong and Korea. All countries use money and investment environment as inducement to attract the talents aggressively.

As to China, its country power has been changed due to the economic rise quickly no matter in political, economic, military and soft fields, which are superior to other countries. In political area, it has the equal level with the super strong country, United States. In the economic area, it replaced Japan as the world second large economic body at the fourth quarter of 2010 and played the important role in 2008 subprime crisis and 2011 Europe debt storm. In the military area, the first aircraft carrier "Liao-Ning" set up on September 2012, and results achievement extraordinary no matter in space, science and technology and military research and development; in soft power, it established the first Confucius Institute in Seoul, Korea in 2004, and Chinese will become the world's second-largest language around the world in the future.

⁷ 聯合報，《張忠謀論人才：不缺台清交 缺創意人》，2012年8月8日。

Hong Kong under the United Kingdom colonial for 100 years, had received the reputation of "the sun never sets in the east" in 1997. While Hong Kong returned to China, the other countries considered that its finances would be collapsed. However, after 15 years autonomy and validation, Hong Kong remains its world's advantageous as a financial center. Hong Kong does not begrudge the investment and recruit the talents to create today's strong financial strength and competitiveness.

For many years, Singapore has been the best country in the world for the new investors, not by the excellent natural resources, nor the vast land, which depends on good investment environment, uncorrupted government, and coupled with government execution. Thus, it can attract the foreign investment and construction instead of tiny, small that has the powerful force of human resources, which makes Singapore to win several Asian first superiorities.

In 1990', Korea suffered the network bubble that has once been announced it was going to be bankrupt. However, Korean Government selected strongly development the network industry, supported the major enterprises and put the foreign talents into an important position in order to revise and create the new economic agenda. Those supplied the Korea economic continued growth. In 2011, it reversed the economic disadvantage and became the member of "20-50"⁸ clubs as the developed countries.

In contrast, Taiwan was the first of the four little Asian Tigers in the past, but is not able to compete with other Asian countries such as Singapore, Hong Kong, Korea and China now. Our current human talents faced "succession gap", "lost generations", and "training

⁸ 朝鮮日報中文網,《韓國下月進入20-50俱樂部 全球第七》,2012年5月28日。"20-50" means the countries their national per capita income are more than U.S.20,000 dollars with a total population of 50 million people. Currently, South Korea has officially jumped to the developed countries that become the world's seven next to Japan (1987), United States (1988), French, Italy(1990), Germany (1991) and the United Kingdom (1996).

insufficient", and "without competition", combined with the economic negative growth as the last of the "Asian Tigers". The Government has repeatedly stressed that Taiwan is facing a talent crisis and job opportunities that are equally important as the economy. However, the numbers of masters and doctors in Taiwan currently are more than one million and 164 tertiary institutions are responsible for nurturing the higher education personnel. In fact, the numbers of students of the higher education in Taiwan are sufficient to supply the industrial, academic, research and government agencies required, but why the Government still worried about the brain drain issue. The migration of talent is the world trend of the normal social phenomenon that the reasonable talent flow can promote the social and economic development. The United States, Europe, Japan and other developed nations do not worry about the problem of brain drain, while Taiwan is very worried about this issue. Is the brain drain caused by the talent crisis or the talent crisis led to a brain drain? The main problems are Taiwan facing of talent crisis. The above problems prompted the motivation of individuals engaged in the study of brain drain.

1.2.2 Study purpose

"Rome was not built one day". Currently, our country faced the international investment environment recession, the international talents hunting snatching competition fierce, domestic talents leaving seriously, and the differences of human resource qualification largely. Moreover, the news reported that the large amount of Taiwanese bachelors go to New Zealand and Australia for labor working recently. The phenomenon of "generations frustration sense" is getting serious. The average payment of the young people was less than it ten years ago , which led to the rate of college students postponing their graduation up to 19.1% and the rate of the unemployment up to 12% in 2012. That is because more and more

students fear the competition of work and escape through the further study or the Government employment for escaping the employment pressures.

National Science Committee on August 7, 2012 held off "Technology development advisory conference". In the Conference, as to the human resources problems in Taiwan, Acer Group founder Stan Shih⁹ pointed out that Taiwan actually does not have enough human talents but the economic status in Taiwan that cannot provide the good opportunities to young people. Thus, the mass generally said that "this generation is worse than the previous generation", which is not logic and unfair on the young people. Today, because of the unwilling to do the investment, it makes not enough job opportunities for the young people. He said that this generation is worse than the previous generation, which is our responsibility. Morris Chang¹⁰, the Chairman of TSMC, said Taiwan is not the lack of the PhD of NTU、NTHU and NCTU and nor lack of the basic human resources, but Taiwan is the lack of mid-level human resources with the creativity and innovation, who are able to convert the science and technology arenas to the economic values.

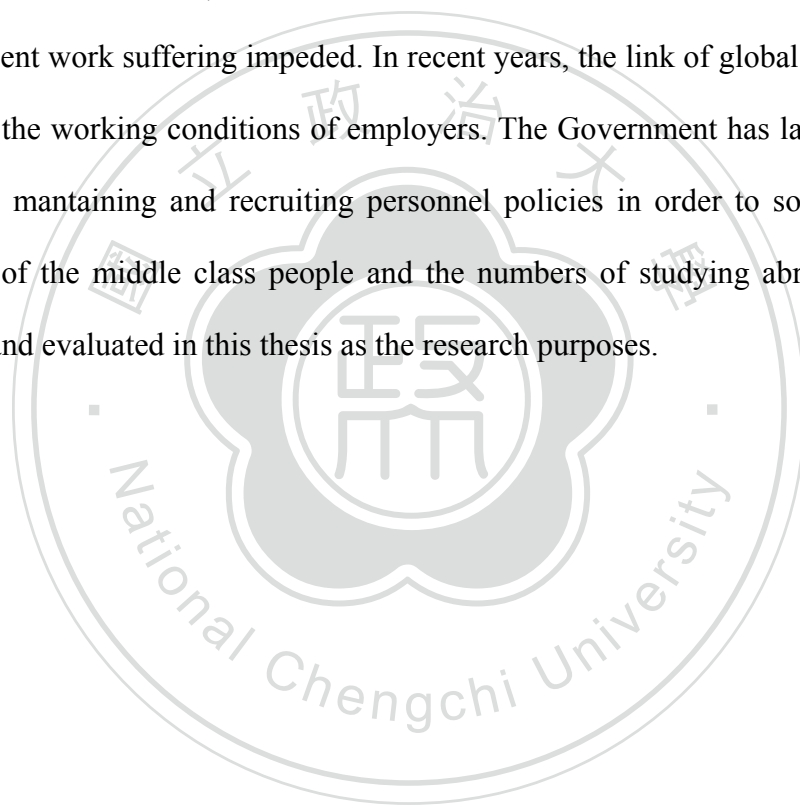
China, Singapore, Hong Kong and Korea in Asia are the major competition opponents against Taiwan. Their training forces are more aggressive and objective. As to China, the government selected Peking University and Tsinghua University as "985 Major University", in which the students are accepted the professional training courses. As to Singapore and Hong Kong, they do not only provide a better investment environment, but also recruit the global human talents through the excellent payment. Korea has its talent cultivation by strong confidence under the single racial cooperated with the excellent training and innovative research with the large companies such as Samsung and LG that create Korea

⁹ 聯合報，《施振榮論人才：應提供舞台給年青人發揮》，2012年8月8日。

¹⁰ 聯合報，《張忠謀論人才：不缺台清交 缺創意人》，2012年8月8日。

have the strong global competitiveness in the network and mobile phone markets.

Compared to the other countries, our Government currently is relatively weak in talent cultivation efforts although we have invested on 50 billion education funding for the major universities in five years for human talent training. However, facing the poor international degree and industry competitiveness, the "magnetic effect" of China, and strong head hunting of Asian countries, those factors led to Taiwan in extended recruiting scholars and retained talent work suffering impeded. In recent years, the link of global economy recession influenced the working conditions of employers. The Government has launched numbers of incubation, maintaining and recruiting personnel policies in order to solve the problem of stagnation of the middle class people and the numbers of studying abroad. These will be discussed and evaluated in this thesis as the research purposes.



Section 3 、 Research Methods/Processes

1.3.1 Research Methods

As the saying that "the cultivation takes a hundred years", which the National HRD is definitely not just happened recently, but the face of the wave of globalization. Many countries would like to solve the problem of the "Brain Drain" as one of the national competition strategy. In president's inaugural speech at the 13th President Ceromony¹¹ said the vision of "Golden Ten Years (黃金十年)" building a country of peace, justice and happiness. The government will strongly emphasize the five points of the strengthen of economic growth momentum, job creation and the implementation of social justice, a low-carbon green energy environment, the national cultural strength and actively cultivating human capital force in order to raise the global competitiveness of the economic momentum that strengthen the personnel training to avoid the brain drain. The personnel training and recruiting has become the government's future objectives that various government departments also actively adopt the various methods to solve the plight of human capital problems by stimulating the economic and professional development and creating the new opportunity of economic miracle.

Firstly, this study will address and collect the relevant theories and literatures to provide a comparative analysis schema of the problems. Afterward, according to the historical data collection and consolidation, a comparative analysis of research is through the literature review. This study will discuss the status and practice of human capital recruiting for the job situtation of China, Korea, Hong Kong and Singapore in a systematic and complete evaluation

¹¹ 中央通訊社，〈總統馬英九就職演說全文〉，2012年5月21日。

Moreover, the evolution of the industrial structure changes which was caused by the quality of human resource, research, enterprise, higher education personnel work of "Incubation (育才)", "Maintaining (留才)", "Recruiting (攬才)". In this study, the number of international students, the willingness westward to work in China, foreign workers, personnel policies and personnel layout will be based on the relevant policies of the departments of the Ministry of Education and other data on higher education to explore the positive approaches of Taiwanese human capital dilemma in the current situation.

This study collected related information and data are enclosed: the related e-Books of China and Taiwan, websites of government, annual reports of education, official documents, laws and regulations of education, research reports, journal articles, dissertations, newspaper reviews, and books.

1.3.2 Process of Research

1.3.2.1 Data collection.

1.3.2.2 Literature review.

1.3.2.3 To collate, summarize and analyze the data.

1.3.2.4 Making recommendations and conclusions.

Section 4 · The research scope, content and limitations

1.4.1 The research scope

Facing the global human capital competition to enhance the national competitiveness and economic strength, every country is increasing human capital recruiting efforts, especially in Asia, such as Hong Kong, Singapore, Korea and China more fierce. The poaching and the flow of human capital has become an universal phenomenon. As to the "brain drain" discussion, this study does not only discuss the recruiting status of human capital flow of the Four Little Tigers in Asia and China, but also emphasize on practical implementation of the effects, problems and corresponding countermeasures of "Incubation", "Maintaining", "Recruiting" work as this research subject.

Followed by the good human capital foundation in the 1970s, the advantages of Taiwan human capital have gradually lost due to the fierce fight of political parties and the more stretched international situation and competition. It is getting harder in the implementation of the "Incubation", "Maintaining", "Recruiting" human capital , although the government has launched the policies of the "22K of bachelor employment program", "57K PhD industry employment program" and "5-year 50 billion major universities plan" to solve the unemployment problem. It is still the urgent needs of palliatives with the global economy and college students' oversupply. The formation of Taiwan human capital becomes that "students cannot do what he learned", "enterprise has working vacancies but no workers", "high-level human capital loss" and "highly educated unemployment rate".

In this regard, the Government is strengthening and sophisticating on human

capital policies through industry, government, academia and research exchange by views and discussions to enhance the communication focusing on the practical solutions. The President will make an important speech focusing on human capital policy, hoping to alleviate the current personnel dilemma on May 20, 2013.

Because it is not an easy job to address human capital problem by personal force, this paper is not available to investigate the whole issues easily and original official data are inconvenience collected. For analyzing the further human capital dilemma of Taiwan, this paper will emphasize on the implementation overview and faced problems of the "Incubation", "Maintaining", "Recruiting" human capital and give the personal opinions for the government.

1.4.2 The research content

"Human Capital Flow" is the current global attention issues. The progress of civilization and "Human Capital Flow" are the same way. "Human Capital Flow" is also a common phenomenon among countries. However, this is an important and serious issue how to recruit the needs of human resource and to retain the cultivation of human capital in the country.

This study will classify out human capital needs on globalization first, and the effects of human capital flows followed by the economic cycle theory and the industry development history. Furthermore, I will compare Hong Kong, Singapore and Korea of "Asian Little Tigers" and China to understand its existing overview and policy of human capital with the difficulties of human capital policies in Taiwan for the references of our future government human capital policies.

1.4.3 The research limitations

1.4.3.1 I was just retired from the army service and had serviced at the important units of the Defense Department, which is limited by the 2nd and 4th item, the ninth article of Ordinance of people relationship of both countries. Moreover, I have signed the "confidential agreement" that is prohibited to enter China. Even though the period of limitation expires, I still will comply with the limitation of prohibiting into China forever to avoid increasing the national and personal plagued. From the data collected, I will gather through a Chinese official government website, statistic data and academic articles as references for writing direction, the same collecting methods with Korea, Hong Kong, Singapore and other countries.

1.4.3.2 I originally planned to use the the fieldwork investigation in this research to actually understand the policies and countermeasures of brain drain of the relevant industry, academic, research and government by letters (Table-2 The communications records) to collect the internal data. However, the Personal Data Protection Act has been implemented on October 1, 2012. Those authorities in order to avoid conflict with the law declined to provide the internal information or reference. Moreover, my ability is limited without enough social relations for the dynamic data collection. However, to ensure the information reality, credibility, and credibility in the process of writing papers, I will continue to deliberate the government current promoted policies and press releases, as well as references.

1.4.3.3 For Taiwan, the dynamic situation of "Incubation", "Maintaining", and "Recruiting" human capital is limited by the provisions of Article 10 of the Constitution. "The people have the freedom of movement and residence, freedom". The Article V of the Immigration Law: "The Taiwanese residents have freedom of entry and exit and do

not need to apply for permission except the national security staff". Moreover, the provisions of Article 9 of Ordinance of people relationship of both countries: "The Taiwanese entering China shall be approved by the general outbound inspection program. As to the data of high-tech, academia brain flow, this is not available to gather by the Immigration Department because the passport will not give the information of occupation, purpose outbound and career, only for those restricting the exit. For the residence information about foreigners in Taiwan, it is available through the Immigration website. As to the dynamic data flow of human capital, I only gathered from the foreigners residence information from the Immigration Department and current job investigation parameters of 1111-Job Bank. Thus, the current countermeasures of "Incubation", "Maintaining", and "Recruiting" human capital will be collected from the official government statistics and policies as the basic foundation and the job bank as the reference.

Table-2 The communications records

Fields	Receiver's E-mail	Reply Content	Appendix
Science Research	Academia Sinica (aspublic@gate.sinica.edu.tw)	Please refer to the "Declaration of human capital" and indicate the source.	1
	National Science Council (misservice@nsc.gov.tw)	Please contact the personnel training office on November 9 by telephone. After contacting with Leader Gin, he said this information is for internal confidential and it cannot be supplied.	2
	Industrial Technology Research Institute (ITRI) (0800@itri.org.tw)	We cannot supply this information.	3
Academic	National Taiwan University (career@ntu.edu.tw)	We can't supply this information to other school's student to protect the security of our students.	4
	National Chiao Tung University (nc50663@nctu.edu.tw)	According to the Ministry of education norms, it is currently only available for the reference of the Council without released by the public or used for other purposes. Please understand.	5
	National Cheng Kung University (em50075@email.ncku.edu.tw)	The employment status survey and data Graduate students have been published on the Website of the school.	6
	National Taiwan Normal University (president@deps.ntnu.edu.tw)	After discussions with the competent educational assessment Center, this information cannot be provided for your reference.	7
Industry	TAITRA (juliawei@taitra.org.tw)	Our main business is to help domestic enterprises to recruit overseas human capital service. As to the "Brain Drain" statistical data, please obtain from the relevant authorities.	8

	1111 Job Bank (sylvia@staff.1111.com.tw)	Please find attachment related to the investigation of working overseas.	9
	518 Job Bank (service@518.com.tw)	Please refer to the relevant data through the website.	10
	104 Job Bank (lolin.lo104@104.com.tw)	Currently, we have found similar reports articles, please click on the following Web site.	11
	E-job Job Bank (FindJOB@mail.ejob.gov.tw)	Due to the the Personal Data Protection Act, we cannot supply you the information.	12
	Global Views Monthly (gvm@cwgv.com.tw)	Please refer to the public information published by the magazine that we are unable to provide additional data.	13
	Common Wealth Magazine (bill@cw.com.tw)	The magazines already published the relevant information. If you need to search any information, please use the keyword throughout the website.	14
Governme nt	Immigration Department (service@immigration.gov.tw)	Please refer to our official website.	15
	Industrial Development Bureau of the Ministry of Economic Affairs (service@moeaidb.gov.tw)	We don't have the relevant statistical data, please refer to the Web site of CEPD.	16
	Mainland Affairs Council (macst@mac.gov.tw)	We do not have the relevant information.	17
	Bureau of Employment and Vocational Training. (b73000026@evta.gov.tw)	Please refer to the Web site of CEPD.	18
	National Youth Commission (jftsaur@nyc.gov.tw)	Please refer to the Web site of CEPD and Education Department.	19

Chapter 2 、 The theory of globalization and human capital flow

Section 1 、 Preface

In this information era, knowledge flows quickly and transcends borders. Globalization and Internationalization is almost irresistible. Many successful countries, companies and individuals are able to predict the future and make decisions faster than the others to seize the opportunity and maintain their priority. Globalization refers to all members in political, economic, social, and cultural interactive and beyond the borders in the global village. Globalization¹² is a process, which is the phenomenon of social relations integration up due to the information and communications technology developed. In this era, a head office in the United States of transnational corporations can put the order through the real-time network to Taiwanese manufacturers and then the Taiwanese manufacturers put the products' specifications and data conveyed to the instructions to the China factories for production. When each country plays the different roles in the production in the sales process, which is able to complete the task by globalization with the geographic barriers restrict collapsed.

¹² 張庭，〈2010 社會學〉，志光文化，第 9 章 22-25 頁。

Section 2 、 The globalization theory and human capital flow

Since the phenomenon of globalization has been existed from ancient era, the watershed concept of globalization that most people think is from the computer invention in the 1970's by the information revolution. The origins of the term of "globalization" was first introduced by Theodore Levitt¹³ in 1983, used to describe the significant change in the international economy from 1965 to 1985, that is, goods, services, capital and technology in the global proliferation of phenomena in the fields of production, consumption and investment. The Organization for Economic Cooperation and Development (OECD) Economist S. Estuary in 1990 have also adopted this concept that refers to the production factors in speed and on a scale unprecedented in the global movement to seek an appropriate location and configuration¹⁴. Ohmae, the Japanese management master, noted in 1990 that the globalized economic activity through the transnational activities such as production, trade and financial integration. The enterprise or region plays a major push to build a new way of social organization that means the globalization eventually replacing the nationalization.

When capitalism entered the period of globalization in the late 1970, each country faces the fierce competition with each other and the third world country is to survive the crisis in this transitional phase. However, the trends of world globalization including the three characteristics are as follows¹⁵:

2.2.1 Led by financial capitalism

With the globalization, the funds of financial markets have the plenty of hot money between movements, like "casino capitalism". When the funds quickly flow between

¹³ Theodore Levitt, 1985. "Globalization of Markets" in the May–June 1983 issue of Harvard Business Review.

¹⁴ David Held 著，陳淑玲譯，《全球化大轉變（台北：偉伯文化事業出版社，2001年1月）》，頁2-13。

¹⁵ Suzanne Keller，《Sociology（台北：雙葉出版社）》。

the country to country that will lead to the manipulation funds of Investment Company to create the beautiful earnings and profit by the short-term operation strategy replaced the long-term investment. Moreover, the industrial production investment will be reduced for their long-term strategy. This is the reason why the financial credit problems repeatedly and the financial crisis recurrence time shortened that brings the major trauma for the global economy such as the Lehman Brothers debt crisis of the United States in 2008.

2.2.2 The world division and North-South hemisphere differences

Although the funds are rapidly moving everywhere, they do not make the global benefit. In 1980, the international funds still focus on their three main sections that are North America, EU and East Asia. In 1960 and 1970, the western countries would like to reduce the production cost to invest overseas that indirectly caused third world countries becoming the newly developed countries. In the past, the lower price products from the East Asia and Latin America made the industrial products from Europe and the United States losing their competitiveness and causing "de-industrialization" and massive unemployment eventually. The enterprise competitiveness of the advanced country is no longer dominated by the low cost, instead of the knowledge and innovation of information technology. All countries began to strengthen the personnel training and development.

2.2.3 Regional trends

Due to the Globalization, the funds movement also caused the regional economic association formed. There are two types of associations. One is formed of the Association by the neighbor countries, such as NAFTA, EU, ASEAN, TPP, APEC, TIFA, ECAP, and CJKFTA. When facing the strong competition between country and

country, many countries take the neighbor cooperation to strengthen their regional competitiveness. The regional association is cooperated by economic way. Another association refers to area association in the country, such as the California Silicon Valley, and Peking Zhong-Guan-Cun(中關村), Hsin-Chu Science Park, Taipei Nei-Hu Technology Park and New York Wall Street. In the globalization process, the regional association gathered special properties and special industry capacity that the local government can skip the central government and attract the external investment. Due to the human capital needs increased, it can combine the regional universities and research institutions to strengthen the human capital development and related commodity research which formed a special economic area based on the knowledge and information. Thus, it is the global industry innovation area, global flow, logistics, movement of financial and information flow to become the area of global localization.

The point of globalization is occurred by the period of the "post-industrial society". When the industry development was not the main structure of the economic development anymore, it was replaced by the formation of service industry and mass consumption. The white-collar workers are replacing the blue-collar workers and the knowledge economy becomes the important sources of social productivity, which is the character of so-called "post-industrial society". What are the differences between the "industrial society" and "post-industrial society"? Bell, a sociologist, stated in 1973 that had five differences including the period occurred, industrial stages, means of production, social levels and productivity (Tabl-3 The differences between the "Industrial society" and "Post-industrial society") .

Table-3 The differences between the "Industrial society" and "Post-industrial society"

	Industrial society	Post-industrial society
Period occurred	18 century - 1970	1970-present
Industrial stages	Industry	Service industry
Means of production	Machines	IT
Social levels	Blue-collar workers	White-collar workers
Productivity	Normal education	Knowledge economics

Ref Resources: The organization by myself.



Section 3 、 The theory of knowledge, creative economy and human capital flow

Following by the perspective of globalization, the OECD proposed the view of "Knowledge economy" in 1996. Gross domestic products (GDP) at present of the members of the OECD are over 50% coming from the knowledge-based industries¹⁶. The human resources development will go to the international division of labor and specialization through the knowledge economy happened. The theories of the human resources development and human capital flow are as follows.

2.3.1 Neo-classical Economic Theory¹⁷

Neo-classical Economic Theory is from the economics angle to analyze the migration behaviors. The migration is caused by the supply and demands of global labour imbalances due to the individuals hope to obtain maximize profits through migration. The wage differences between countries is produced human capital flows. When the benefits obtained are greater than the consumption cost and migration happened. Massey (1993) pointed out that the wages differences will cause the human market heavy distribution continuously to reach the balanced because human resources based on self-consider who will migrate to the high-income areas. The larger wage differences induce the higher human capital flows.

The neo-classical economic theory was encountered the difficulty in the 1990's because the theory is based on the wage-gap as the main reason of migration. It does not explain there is an obvious phenomenon of the wage-gap of the European countries

¹⁶ 周八俊，迎向新世紀國際經濟一體化（上海：上海人民出版社，1999年6月），頁182-183。「知識經濟」係指直接建立在知識與信息生產、分配與使用上的經濟，知識為主要生產要素與構成社會經濟發展主體。

¹⁷ 張靜文（2007），《我國專技移民政策及制度之研究》。國立政治大學行政管理碩士學程，頁8-9。

that show the migration only occurred by upper middle levels with more information and rarely occurred by the low-income levels. Thus, the wage-gap is not the only reasons of human capital flows.

2.3.2 The theory of global division of labour force and international trade

The maximum change of the economic globalization is to promote the world resources to the most appropriated configuration. A country is limited by the national resources and market limit regardless how high efficiency of its economic growth. It is the only way to integrate the global resources and market limited by the national resources and market insufficient. The economic globalization caused the phenomena of the international division, industry transfer, funds and technology flows, and transnational mutual deepened after 1990.

Adam Smith in his book "The Wealth of Nations" stated that the theories of globalization illustrated a country's economic growth is from its productivity, which means maximum increase attributed to the result of the division of skilled labour productivity. Thus, the division of labour and development will raise the workers' professional skills and progress the labour productivity. The productivity also depends on the specialization of labor. Allyn Young (1928) stated the "Young Theory" to solve the question of the division of the labor in the article of the increasing returns and economic progress. This theory stated that increasing return scale depends on the evolution of division of labor and market size determines the division of labor standards. Houthakker (1956) made it clear that trade efficiency determines the market size affect the division of labour standards¹⁸. Peter Munz.Kemp said that the developing countries in the globalization increase economic development opportunities as the industrialized

¹⁸ 胡鞍鋼主編，《全球化挑戰中國（北京：北京大學出版社）》，2002年6月，頁15-18。

countries¹⁹.

With the economic globalization, countries by the economic integration of legal, regulatory and market globalization through the international division of labor made labour classified, levels upgraded, professional upgraded from the theory of international trade. Yang and Borland (1995) stated the "International Trade Theory" that the three modes of the economic growth by the progress of the diction of the labor. Firstly, the undeveloped division of labor not will decelerate the economic growth. Next, the well-developed division of labor will progress the economic growth. Then, the fully developed division of labor will slow down the economic growth. According to the above theory, it can found the division of labor and transactions efficiency is major factors related to a country's economic growth²⁰. P.M.Romer stated that the developed country entered the period of economic growth and the developing country still in the low stage. Their economic growth differences will be expanded and gradually have more divergence²¹. Sala-Martin staed that the developed country entered the period of economic mature (division degree high but division progress slowed) and the developing country entered the period of economic growth. Both economic growth rates will appear convergence²².

According to World Bank (WB) in 2002 research displayed that the global economic of trade, funds and immigration were continued growth after 1870²³. It can be divided into three stages including the period of 1870-1945, 1945-1980 and 1980-present, which the developed countries in third time migration actively participate

¹⁹ 張驥，《經濟全球化與當代社會主義的發展（北京：中央編譯出版社）》，2002年6月，頁168。

²⁰ 胡鞍鋼主編，《全球化挑戰中國（北京：北京大學出版社）》，2002年6月，頁15-18。

²¹ P.M.Romer, "Increasing Returns and Long-Run Growth", p1030-1035.

²² Sala-Martin, "Convergence", *Journal of Political Economy* Vol 100, No.5, 1992, p223-251.

²³ World Bank, "World Development Report (New York: Oxford University Press, 2002)", p23-30.

the international division of labor, such as China, India, Malaysia, Philippines and Thailand. They gradually play an important role in the global market. Due to the differences degree of the economic and development, the global human capital migration has the trend of migration from the backward to the advanced regions, Southern hemisphere to Northern hemisphere, lower development to the higher one and developing to developed countries. Thus, the degree of participation globalization and resources effective distribution are the important factors to promote and shorten countries into modernization. The division theory in the economic growth plays an important role.

2.3.3 Specialized division of labor and endogenous growth theory

Theodore W.Schultz, Nobel economic Prize laureate, clearly stated on "Human Capital Theory" that human capital is the most important of the four factors of production including land, human force, capital and technology. The levels of the human capital depend on education, while human resources with high quality attracting other countries poaching human resources. Human capital is the main factor to progress the national economy growth. The human future is decided by the population quality and knowledge investment, in which the most important factor is human resources. The economic development depends on personnel quality improved, and the quality of personnel can be improved only through knowledge education, which is divided into "professional knowledge" and "general knowledge". The professional knowledge refers the knowledge to help upgrade the material capital quality. In economic modernization, the professional human capital of accumulated is to upgrade the professional

knowledge²⁴. Michael E.Porter said in the *Competitive Advantage of Nations* that affecting the production factors are divided into higher and lower categories. The national competitive advantage must be reached by advanced, professional, and creative factors²⁵.

From the perspective of human resource, the higher factor means the human force from the higher education. In other words, the countries own more high-quality human capital, which will be able to achieve leading position in the world after 1990 of the economic globalization. Therefore, a country's economic growth relied on division of labor not only levels of refinement, but internal specialization of human capital. Thus, to upgrade human qualities meets the economic development needs of the countries.

"Theory of international division of labour" for the developing countries can promote the economic growth, but for the developed countries of the stages of economic maturity have been insufficient to respond to the development needs of the country. Thus, "New Grow Theory" becomes the developed countries pursuing the economic growth theory. "New Grow Theory" started in the mid of 1980, was based on neo-classical growth theory that mainly increasing the scales of returns and internal mining technology are the major factors for a country's long-term economic growth.

2.3.3.1 External, increasing returns and economic growth

Arrow (1962) explained firstly that the endogenous technological progress in economic growth, technological advances and productivity gains for capital accumulation effects, the outputs the overflow effect of that investment²⁶.

²⁴ 王瑞琦,《全球化與兩岸應與人才開發策略比較分析》,中國大陸研究,2002年11月,頁85。

²⁵ Michael E.Porter 著、李明軒譯,國家競爭優勢(上)(台北:天下出版有限公司,1997年),頁114-115。

²⁶ Arrow, "The Economic Implication of Learning by Doing", *Review of Economic Studies*, Vol 29, 1962, p155-173.

P.M.Romer (1986) on "Knowledge Overflow Model" assumed that knowledge is an endogenous factor in the economic system that the knowledge overflow can improve the social productivity and economic growth²⁷.

R.Lucas further explained P.M.Romer theory that the global economic and external human capital overflow caused by external effects of human capital to improve the productivity and economic growth of all factors of production²⁸. When the government does not intervene in the economy equilibrium, the investment in human resources will be reduced, especially in the high level of human capital in developed countries. Based on increasing returns of capital, it makes human capital migrate from the developing countries to the developed countries. Barro illustrated the importance of government intervention, because the government is the key factor of economic growth through provided by various government services and infrastructure, which will represent the production rendering "increasing returns to scale and endogenous economic growth" effect²⁹.

2.3.3.2 Division of labor and economic growth

Adam Smith³⁰ has seen the division of labor as a source of economic growth first. Allyn Young³¹ deepened this statement further that the economic division of labour is a professionalized economics. G.S Becker. and K.M.Murphy(1992) further stated the division of labor as a professional process in the "Becker-Murphy Model". The identity model illustrated that the division of labor and technological progress

²⁷ P.M.Romer, "Increasing Returns and Long-Run Growth", p1030-1035.

²⁸ Lucas, "On The Mechanics of Economic Development", *Journal of Political Economy*, Vol 98, No.5, 1990, p103-125.

²⁹ Barro,R., "Government Spending in a Simple Model of Endangerous Growth", *Review of Economic Studies*, Vol 29, 1962, p155-173.

³⁰ 譚崇台,《發展經濟學(台北:五南圖書出版有限公司,2004年1月)》,頁86。

³¹ 朱鳳,《技術進步與經濟的內生增長》,中國社會科學,1999年第1期,頁27。

does not have a direct relationship, but the interaction relationships. One is promoting function of productivity is from the economic knowledge. On the other hand, the division of labour can promote the knowledge accumulation driven by the degree of specialization of workers with the proprietary technical standards.

When the knowledge economy is increasing, the accumulation of knowledge can reduce the cost of economic coordination, evolving and sustained economic growth will enable the division of labor, specialization and economic growth through the accumulation of knowledge, human capital and technological progress as the economic sources of growth. In the globalized market, due to international trade frequently, it makes widely disseminate knowledge and human capital to accelerate the country's economic growth by the overflow effect, which is the phenomenon of "Brain Drain". Therefore, it is only through government intervention to reduce the loss of investment in knowledge by the effect of overflow.

According to above statements, many researchers said that the economic growth is by the technological progress, the accumulation of knowledge, the progress of human capital and increasing returns reached. When the overall economy raises, human capital and specialized knowledge will be upgraded to further accumulation and higher levels. Thus, it will contribute to the economic growth and endogenous technological progress mutually into the virtuous cycle of development. Analysis of today's human resource development in the globalization, "New Grow Theory" view is the basis of the countries on human resources development since the beginning of the 1990s, but also for developed countries, developing countries and undeveloped countries start thinking about how to promote the country's economic growth and to win the competition.

Chapter 3 、 The development of Taiwanese industries and human capital

Section 1 、 The business cycle³² and stages of economic development³³

The business cycle, a country's overall economic activity movement, can be divided into the classic cycle and the growth cycle. The former refers to the level of economic activity value fluctuations and the latter refers to the long-term trend without cyclic fluctuations. Taiwan and the OECD adopted the concept of "growth cycle". Burns and Mitchell (1947) divided business cycle into four stages (Table-4 Four stages of business cycle) including recovery, expansion, contraction, recession, and then recovery. (Figure-2 The Business Cycles). A series of economic fluctuations will be occurred repeatedly for the duration from one year to ten years. A boom cycle includes a period of expansion (between the economy bottomed through the period of the boom peak) and a contraction (between the boom peak to the economy bottomed period). In the fact, on a period of expansion and contraction should continue for at least five months and the whole circulation is at least 15 months.

³² 經建會，《我國第 11 次景氣循環高峰之認定與研析》。

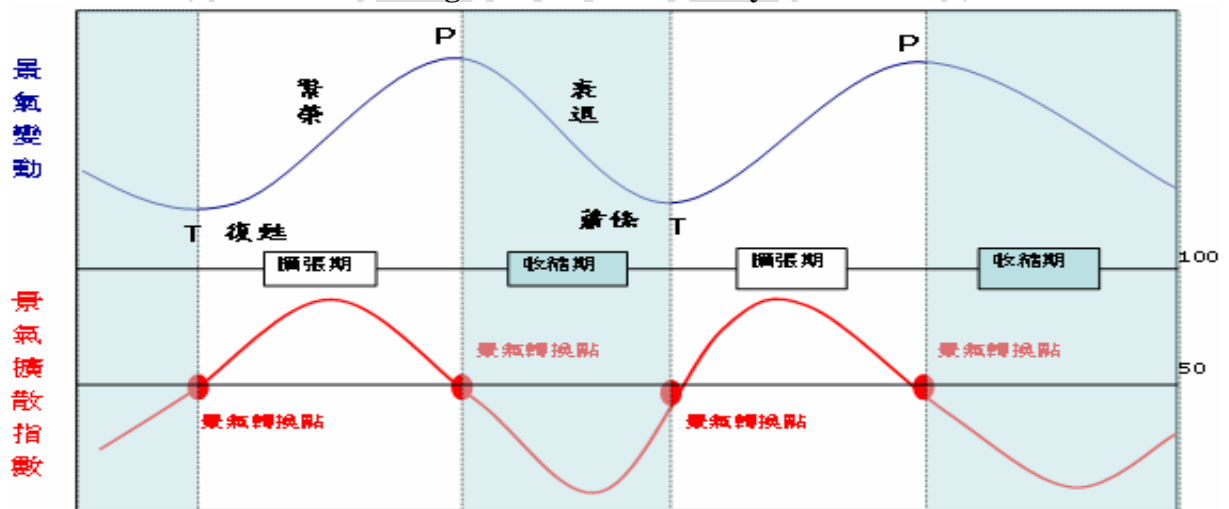
³³ http://big5.xinhuanet.com/gate/big5/news.xinhuanet.com/ziliao/2003-01/23/content_703815.htm

Table-4 Four stages of business cycle

Classified by the Innovators	Classified by the Duration	Classified by the Objects	Cycle	Factors
Kitchin Cycle	Short	Inventory cycle	3-4	Production, sales and inventory adjustments
Juglar Cycle	Middle	Equipment investment cycle	10	Equipment investment, innovation, productivity
Kuznets Cycle	Construction		17-18	Length of housing, housing demand
Kondratieff Cycle	Long		50-60	Population growth, the development of new resources, capital accumulation, war

Ref : CEPD

Figure-2 The Business Cycles



Ref : CEPD

Taiwan has been experienced 12 full business cycles since the Kuomintang party came to Taiwan in 1949 (Table-5 Taiwan Business Cycle). Now, it is in period of recession of the 13th business cycle. Taiwan is facing the difficulties of the prices rising, unemployment rate increasing, payroll declining shown in the economic monitoring indicators (Figure-3 Taiwanese economic monitoring indicators, 1984-2010) and the unemployment rate (Figure

-4 Taiwanese unemployment rate, 1978-2010), the main representative indicators of the business cycle. Because of facing of the global downturn, the government continues to increase the investment of public construction and the job opportunities such as "The development of six new strategic industries", "The economic dynamic progressive program", "The golden ten years plan", "The development of the aviation city" and other policies to revive the economy, increasing the cultivation of HRD as the major promoter of Taiwan revitalization and recovery. The business cycles are closely related to the industrial development. The Taiwanese economic development before the 21st century was divided into four stages and described as follows.

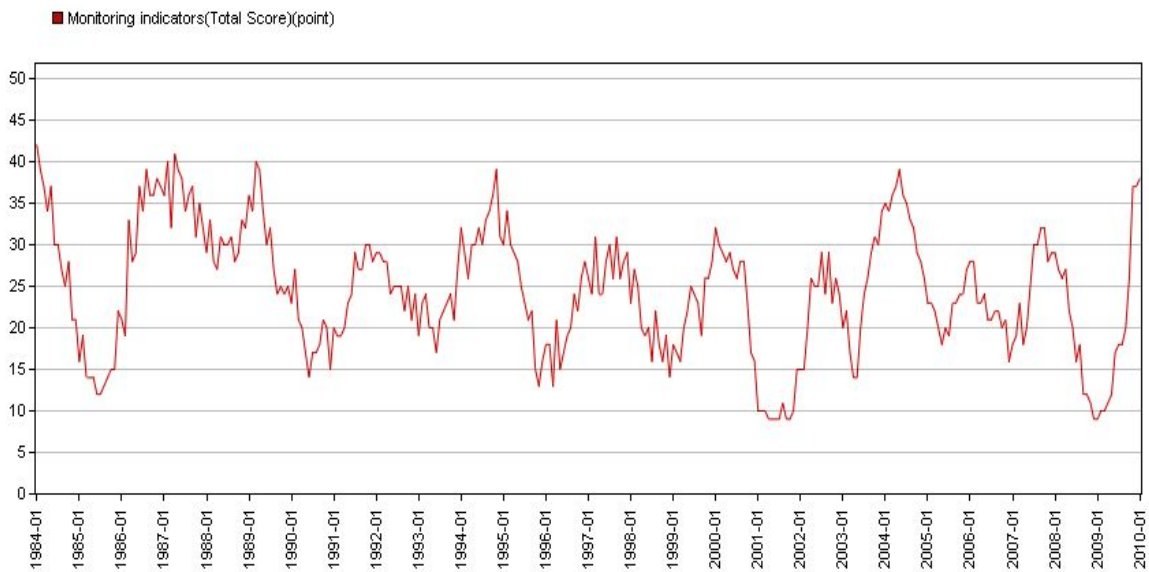
Table-5 Taiwan Business Cycle

Cycle List	trough	peak	trough	Duration(months)		
				Expansion	Contraction	Cycle
1	1954.11	1955.11	1956.09	12	10	22
2	1956.09	1964.09	1966.01	96	16	112
3	1966.01	1968.08	1969.10	31	14	45
4	1969.10	1974.02	1975.02	52	12	64
5	1975.02	1980.01	1983.02	59	37	96
6	1983.02	1984.05	1985.08	15	15	30
7	1985.08	1989.05	1990.08	45	15	60
8	1990.08	1995.02	1996.03	54	13	67
9	1996.03	1997.12	1998.12	21	12	33
10	1998.12	2000.09	2001.09	21	12	33

11	2001.09	2004.03	2005.02	30	11	41
12	2005.02	2008.03	2009.02	37	11	48
Average				39	15	54

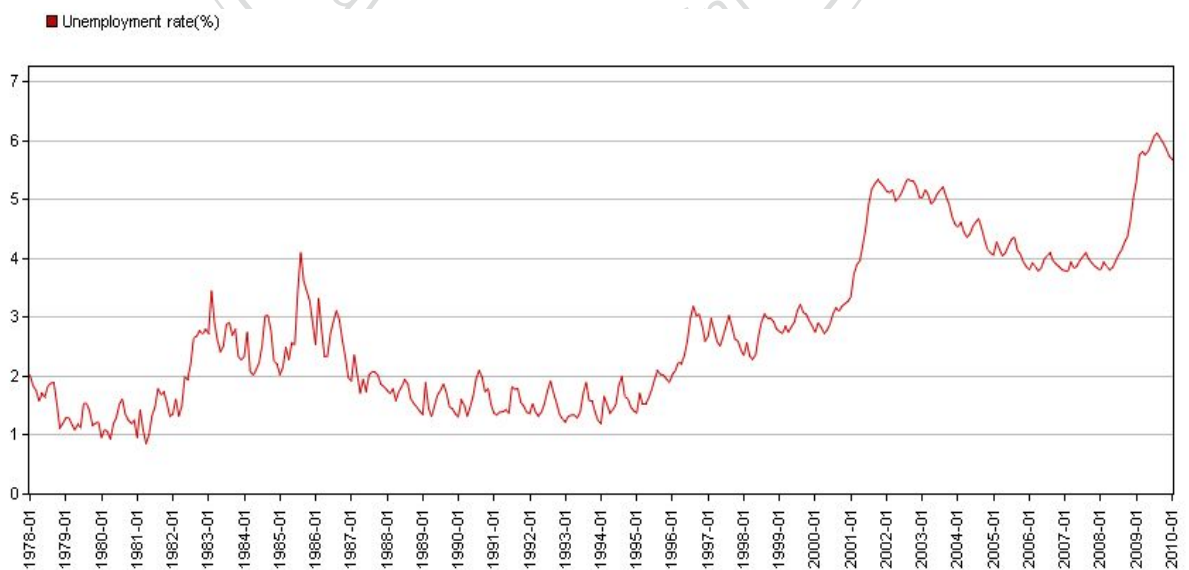
Ref : CEPD

Figure-3 Taiwanese economic monitoring indicators, 1984-2010



Ref : CEPD

Figure-4 Taiwanese unemployment rate, 1978-2010



Ref : CEPD

3.1.1 The period of economic recovery (1949-1952)

The Government of the Republic of China in the KMT-CPC defeated occupied Taiwan in 1949, resulting in the Taiwan society facing the rapid population growth, rising prices, industrial, agricultural production standstill, and military expenditure accounted for more than half of fiscal spending. The phenomenon of people living in difficult and the economy closed to collapse. The Taiwan authorities had adopted a series policies and methods of maintenance of stability and economic recovery such as the land reform, currency reform, foreign trade controls and giving priority to the development of electricity, fertilizer, textile and other basic industries. Since the 1950s, the rapid development of Taiwanese agriculture by the growth rate of 4.7% and coupled with the implementation of economic assistance by USA to inject a lot of money to assist recover the economic. In 1952, the foundation of Taiwanese economics has been the same as the pre-World War II standards.

3.1.2 The period of agricultural workers (1952-1960)

In agriculture area, Taiwanese economy is still dominated by agriculture. Due to the labor force surplus, foreign trade and the international balance of payments debit seriously and a tremendous shortage of foreign exchange, those situations lead to the people with the low income and inability consumer the imports of industrial goods. The government tried to stimulate the development launching the guidelines of the cultivation of industry by agriculture, the development of agriculture by industry. Land reform promoted the agricultural labor productivity. The proportion of total exports of the agricultural products and processed products was increased up to 71.5% of foreign exchange in 1957. The government bought the rice with fertilizers and compulsory acquisition by not equivalent exchange to earn the profit and transfer to the industrial

sector.

In industrial area, the government emphasized on small investment, low technology, and factory building cycle short of livelihood industries to alternative imports by the domestic production to adapt to domestic consumption, save foreign exchange spending, create job opportunities and reduce the unemployment rate. The industries of sugar, tea, pineapple and other agricultural products processing industry, cement, glass, wood products, paper, fertilizer, textile, flour, plastic products, artificial fibers and household appliances were formed.

3.1.3 The period of export-orientation (1961-1985)

The market of the imported product was saturated and the government caught the opportunity of the international division of labor and post-Fordist era to take advantage of low wages and vigorously develop the export processing industry to promote economic development. There were many succession amendment or develop export promotion policies including conducting foreign trade reform, the implementation of the investment, incentive ordinance, to encourage private savings, taxation and financing deals to export firms, the establishment of export processing zones and bonded warehouses, etc. In this period, the foreign investors played an important role in Taiwan's industrialization and export expansion. The civil enterprises from import substitution transferred to export industries as the main force of economic growth.

The raw materials of Taiwan enterprises were imported from Japan and exported industrial products to American. The formation of production was depended on Japan and market was depended the United States as the triangle trade relations that made the industries high-speed development. The industrial average annual growth rate was 18.3% in 1963-1973. The manufacturing industry average annual growth rate was

20.1%. The industrial output value accounted for the proportion of gross domestic product (GDP) increased from 26.9% in 1960 to 43.8% in 1973. The exporting industry products rose from 32.3% in 1960 to 84.6% in 1973. Taiwan government established the export processing zones as the core processing industries such as textile, home appliances, industrial pillar to drive the economic miracle of Taiwan, making Taiwan's economy strength among the first of the "Asian Tigers".

3.1.4 Period of economic transformation (1986-1996)

Since the 1980s, due to changes in the internal and external economic environment such as the sharp appreciation of the NT dollar against the U.S. dollar rose sharply, wages increasing and the labor shortages, the labor-intensive exporting industry is the gradual loss of comparative advantage and low private investment willingness. Thus, the economic development was into the difficulty. The government in 1986 proposed a policy of "Liberalization, Internationalization, Institutionalization" of economic restructuring to improve the mechanisms of a market economy, industrial upgrading and expansion of the foreign trade market besides the United States as a major adjustment. Moreover, the government determined the ten new industries as a pillar industry including communication, information, consumer electronics, semiconductor, precision machinery and automation, aerospace, advanced materials, specialty chemical and pharmaceutical, health care and pollution prevention.

Taiwan has experienced economic restructuring and economic progress in the liberalization and internationalization, industrial upgrading and also the early effectiveness of capital and technology-intensive industries accounted for the manufacturing sector reached 61.5%, including the development of the communication industry highlight, the output value has been ranked the top of world. Taiwan's

exporting market was shifted to Asia from Europe and the United States. The proportion of exports to the United States was from 48.8% in 1984 down to 23.7% in 1995. The proportion of exports to Asia rose from 32.8% in 1988 to 52.6% in 1995. The structure of export products was changed that electronics, information technology, machinery, electrical and transport equipment products more than 50% of total exports. Moreover, the substantial increasing in foreign investment began to become a net capital exporter, accumulated to foreign investment of \$30 billion in 1995 that Taiwan and China increasingly had economic relationships.

The rapid growth of cross-strait economic and trade, China has become Taiwan's major trading partners and export of capital. The government in 1991 promulgated the "Statute for Upgrading Industries" to promote the "Ten New Industries"³⁴ giving reduced investment tax and strengthening the national communications infrastructure, incentives and subsidies, research and development of new products. Moreover, the government tried to open free competition with foreign enterprises, and the Asia-Pacific Regional Operations Center plan announced in 1995 to promote the internationalization of the economy.

Taiwan's average GDP growth rate was 6.19% from 1960 to 1999, only after Korea of 53 GDP recorded countries. In the industrial structure (Table-6 The GDP accounted for the proportion of each industry), it had a dramatically difference. In agriculture, the proportion of the agricultural output value of GDP ratio was declined from 32.3% in 1951 to 2000 to 2.1%. In industry, the proportion of the industrial output value was accounted for GDP ratio from 21.3% in 1951 to 45.5% in 1981, then down to 32.4% in 2000. The GDP ratio in the service

³⁴ 蔡仰虔，《台灣經濟發展階段論》，2008年5月17日。

sector, the services industry had not been more than 50 % in 1981 to 65.5% in 2000. The GDP ratio is closely related to the industrial structure, thereby affecting the "Incubation", "Maintaining", and "Recruiting" human capital work layout and the guidelines of the national competitiveness and development.

Table-6 The GDP accounted for the proportion of each industry

	1951	1972	1981	1990	2000
Agriculture	32.3%	13.1%	7.3%	4.2%	2.1%
Industry	21.3%	38.9%	45.5%	41.2%	32.4%
Service Sector	46.4%	48.0%	47.2%	54.6%	65.5%

Ref: 吳聰敏 (2003), 《台灣經濟發展史》



Section 2 、 The history of industrial development and personnel training

The economy of Taiwan after World War II was operated through the import substitution, export-oriented development, the strategy of structural adjustment and liberalization restructures to ensure the national strength fast-growing. Furthermore, it created the "economic miracle" in the 1970s and became the first of the "Asian Tigers". However, after the financial crisis of the 21st century followed with the internal friction circumstances of the Congress, the national and economic strength is much worse than in the past. Thus, in the face of foreign heavily human capital hunting, the government now energetically prevented the "Brain Drain" expanded due to the closely triangular relationship the economy, industry and human capital. The history of industrial development and personnel training will be described as follows.

3.2.1 1950's-Mainly importing substitution

Taiwan was faced of the devastation brought by World War II, the situation of political instability, population growth; shortage of materials and rising prices, the economic development was extremely grim. From World War to the end of the 1950s, the main economic policies aimed at social stability and economic recovery with import substitution policies to restrict exports to stimulate the economic revival and development in a relatively short period. The government is relatively little focus on personnel training only use of a large number of the Chinese people under the autocracy system.

3.2.2 1960's- Export-orientation

The late 1950s, Taiwan's economy was stabilized and the government began to develop the industries which can increase exports and reduce imports to help improving the

international balance .The development was focused on less investment, low technology, increasing employment, industrial self-production and the civil livelihood, such as textiles, food, cement, plastics, etc. As to the foreign trade policy, the government adopted the investment incentives, ordinance, the establishment of export processing zones and other methods to adapt export-oriented. Thus, it was gradually formed an open economic system and created the economic miracle, recruited the educated youth of the Japanese Era and the members of party loyalty during the KMT-Communist period.

3.2.3 1970's-The economic take-off period

The global financial crisis was occurred in 1971 and 1972. The food crisis and the oil crisis was in 1973 and the international economic situation upheaval leading the scene of economic stagflation in the industrial countries that have a tremendous impact on Taiwan's economy. The Taiwanese infrastructure was not complemented in the 1970 and the labor-intensive industries faced an energy crisis leading to the problem of rising wages, the industrial slump and high unemployment.

To revitalize the industry, the government began to aggressively cultivate the human capital. The government promoted the nine-year compulsory education to improve the people literacy rate and education level. In addition, Sun Yun-suan, the former Premier of the Executive Yuan, determined the development of the semiconductor industry by technology from the United States, actively improved the research and innovation environment, and increase the payment of technological R&D people. On the other hands, the government restricted exports, expanded imports and adjusted the economic policy in order to reduce the impact of the two oil crises. The original four-year economic construction plan was changed to the six-year economic

construction design painting by the Ten construction projects to improve the industrial structure, promote industrial upgrading , agricultural modernization , transport facilities, the development of energy and marine resources, and the efforts of expanding foreign trade that the formation of the industrial system of heavy industry and light industry balance.

Technology, capital, personnel, and management are the four important factors in the development of high-tech industries; especially the human capital is the most important factor. In view of the government agencies subject to the statute of limitations, Sun Yun-suan ,the former Premier of the Executive Yuan, decided to establish the Industrial Technology Research Institute (ITRI), which engaged in the research and development of the application of technology to upgrade Taiwan's industrial technology. Moreover, the institution selected 38 researchers to the RCA of the United States to accept semiconductor training in 1976 to set up the base of Taiwan high-tech industry. The Information Industry Institute was established in 1979. The Industrial Technology Research Institute was established in 1982. The enhancement of training and recruiting senior talent program³⁵ was set in 1983. The intention is to recruit the advanced technology industries and human capital.

The government would like to develop "two high, two low, and the two strategic industries" of a high degree of technology, high value-added, low energy density, low pollution levels, industrial linkage effects, market potential in 1978, implementation of the national ten major construction projects with large science parks³⁶ to encourage

³⁵ 經建會，《人才培育方案》（行政院 2010 年 8 月 10 日院台教字第 09900041114 號函核定）。

³⁶ Hsinchu Science-based Industrial Park site. The speaking of the 20th anniversary of the Hsinchu Science-based Industrial Park, the former National Science Council Director, Xu Yin-sho(徐賢修) reporting to the late President Chiang Ching-kuo (蔣經國) said that Taiwan Industrial reborn is to be made by the modernization of the industrial capacity. The Science Industrial Park has the multiple roles for the returning

advanced degrees to participate and the defense reserved system. In addition, the post graduated institutes of management, engineering, agriculture, medicine were largely established by actively recruiting residing overseas scholars back to various universities and slowing the Brain Drain to strengthen the foundation the cradle of the semiconductor industry of the high-tech information industrial development. Then, under the leadership of the overseas scholars of Li Kuo-ting, Sun Yun-suan, Chao Yao-tung (趙耀東), Morris Chang and Lee Yuan-tse, the Nobel entrepreneur Prize in Chemistry laureate, the high-tech industry earned the large foreign exchange for Taiwan, mass cultivation and high level human capital returning that improve the Taiwanese position in the world of creating an "economic miracle".

3.2.4 1980's-The economies transition

Under the pressure of U.S. trade protectionism in the early 1980s, the Taiwanese Dollar was forced to the sharp appreciation, followed by rapidly rising wages, land prices soared. Taiwan was transformed toward a free and open economy and began to encourage free competition that improved the market regulation mechanism and reduced the administrative intervention to achieve full play to the market mechanism and the rational allocation of resources. The purpose of the transformation policies was aimed to improve the competitiveness of the economy and efficiency. In the late 1980s, Taiwanese traditional industries with the rapid rise in the cost of production quickly moved to China and Southeast Asia to provide the space for high-tech industry development that stimulating the speed of industrial upgrading and the tertiary industry

of overseas technology professionals in politics. The system input was required for industries in the economics. In the domestic industrial manufacturing, the management and marketing can produce the inspiration opportunities. In education, it can promote the cooperative education, providing the school education and college graduates the challenging entrepreneurial and employment opportunities. In the defense consideration, it can be used for the high-tech design and manufacturing capabilities in the basic needs of the defense industry.

developed rapidly. The high-tech industry has become a pillar industry of Taiwan. The technology-intensive products also become the new main items of exporting. In addition, Taiwanese economic base considerable offered by the technical and vocational education system, reached its height in the 1980s and the highest number of high school and vocational high school students had reached the ratio of 3 to 7³⁷. Learning by doing made the students not easily matched from the jobs and shortened the adaptation periods in the workplace that promoted the nurtures SMEs established.

3.2.5 1990's-The period of economic plan acceptance

To adapt to the changes by the domestic and international economic environment in the 1990s, Taiwan began to develop vigorously the economy to increase national income, capabilities for industrial potential, balanced regional construction and to improve the quality of life as the goal of the national economic plan. Furthermore, the government hoped to build Taiwan as the global logistics center and put more emphasis on the development of emerging high-tech industries.

The development of Taiwanese economic was transferred to capital-intensive and technology-intensive industries to promote the development of strategic industries of electronics, optoelectronics, aerospace, motor, and the chemistry of civil livelihood. Moreover, the government adopted the policies to strengthen the use of high-technology HRD programs of the domestic industrial personnel professional capacity and specialist technical education, the expansion of the University and the Institute of Technology in Education, and pre-employment and job-training pipeline working engineers and technical staff in 1996. During Wu Jing(吳京) as the Education Minister, he enhanced the level of EFA vigorously to promote the Recommendation Entrance, repealing the

³⁷ 天下雜誌,《學歷與實作力脫鉤》,2008年11月19日。

Joint University Entrance Examination, expanding the universities, the five-year colleges restructuring to institutes of technology and universities of science and technology. This policy dramatically increased the number of students with college degree or above and made the future shortage of HRD and HRD contradiction.

3.2.6 2000'–The diversified economy plan

After 2000, with the varied and complex international situation, the development of the required human capital was toward the multi-direction. Taiwan was facing competition in the knowledge economy and the government hoped to enter into the international industrial supply chain by the knowledge force. The relevant policies of the government in recent years in terms of economic and personnel were as follows.

3.2.6.1 In 2002, "The Six-Year Development Plan³⁸" started HRD of "E-generation HR cultivation plan" including "The international living environment creating", "The promotion of national English proficiency", "The universal GEPT", "Intensive English teacher qualification", "The universities Internationalization", "The foreign students importing", "The digital learning environment establishing", "The of civil servants, workers, farmers and fishermen, retired officers and soldiers of lifelong learning strengthening" of total NT 9.5 billion investment. In the view of the current talents dilemma, the government in promoting the effect of "E-generation HR cultivation plan" not enough to create the foreign language environment to attract the foreign students. There still have space for improvement.

3.2.6.2 In 2003, "The Use of Scientific and Technological Personnel Training and

³⁸ 經建會，〈國家發展重點計畫 2002-2007〉。

Program³⁹" was focus on five strategies in HRD of "The strengthening and cultivating the HRD of university science and technology", "To strengthen industrial technology professionals training", "The actively recruiting the technology professionals overseas", "To promote the use of human capital exchange" and "The building a quality environment". The performance was slightly significant improved in terms of scientific and technological personnel training in-service education and training and University of science and technology cultivations". The rest has yet to be improved.

3.2.6.3 In 2006, "The major overall HRD nurturing and utilization program⁴⁰" divided strategies into "The major supply and demand monitoring mechanism"; "The University Corporationilization"; "The establishment of professional schools"; "The development of features and functions segmentation of universities"; "The training priorities and cross-cutting talent"; "The cooperation of the schools and industries"; "To strengthen the digital learning"; "To strengthen the industry personnel technical training"; "The enhancing vocational institutions and enterprises cooperation"; "To strengthen overseas HR recruiting"; "To exclude the overseas HR limitations" and "To build the appropriated research environment". Nowadays, the recruiting efforts of building the overseas HR environment still need for improvement, and the other in the industry-university cooperation efforts should be closer to implementation of learning and training in parallel.

3.2.6.4 In 2007, the implementation of "The industrial labor plan⁴¹" was divided into nine

³⁹ 行政院科技會報，《科技人才培訓及運用方案》。

⁴⁰ CEPA，《重點人才整體培育及運用規劃》。

⁴¹ CEPA，《2015年經濟發展願景第一階段三年衝刺計畫》。

key plans and four concepts of human development. First, the integration of existing HR information on supply and demand and timely adjustment of human resources strategy were illustrated. Second, the strengthening of the functional training and instant supplement industry technical work force were planned. Third, the development of the flexible educational system should fit the demands of the industry. Last, the relaxation of the personnel system and value-added cooperative synergy were required. After three years of implementation, the results were ineffective. The relevant units should be reviewed and improved to avoid the regeneration of HRD retention and the dilemma of recruitment.

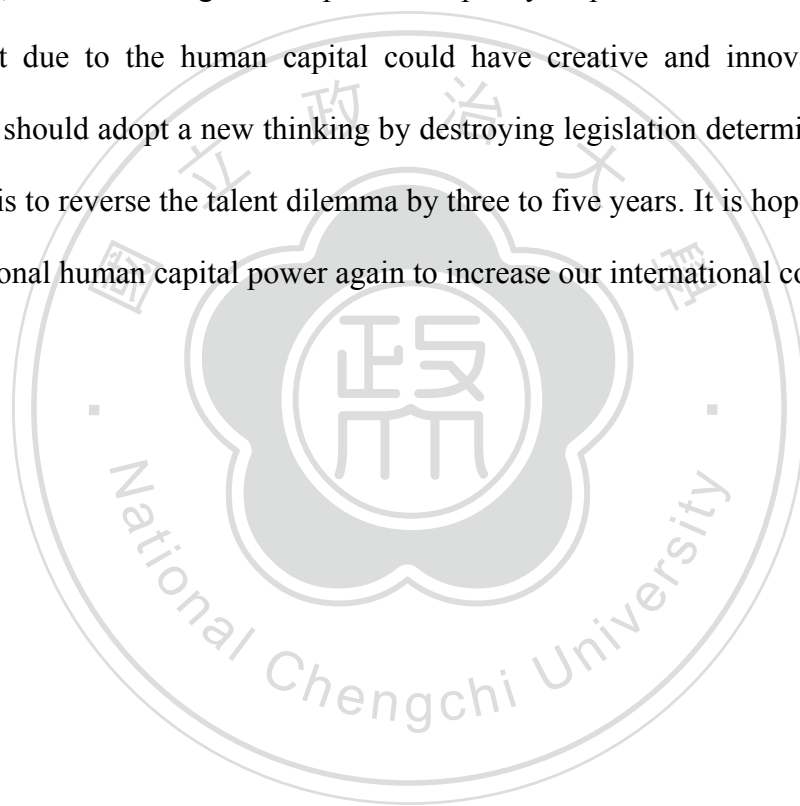
3.2.6.5 In 2008, "The program of attracting the global foreign talents working in Taiwan"⁴² in order to recruit the international professionals was approved by the Executive Yuan to promote issued by "Three Priorities" of the foreign workers. However, the limited numbers of eligibility and the actual benefits still yet have efforts space.

3.2.6.6 In 2010, the government promoted the six new industries, the 10 priority promoting development of key service industries and four new smart industries and set "The personnel training program" that is still running. The implementation of the effect is still under inspection.

In summary, the performance of the personnel policies of Taiwan in the past spent the large budgets, but the most of them were over formality, ineffective implementation without actions, which caused facing a HRD crisis. However, the governments of the Hong Kong and Singapore reduce many procedures and adopt an order from the determination to the efficiency of the implementation of various personnel policies for HRD. Although the results

⁴² CEPA, 《吸引全球外籍優秀人才來台方案》。

of the personnel policies are not immediately effective, they must be long-term considerations for the implementation of personnel policies that should not be changed because of the policy-makers alternation as the political parties changed or anticlimactic. The ministries and departments should mutual assist and cooperate with each other, rather than the long carriage or rudderless. Thus, the policy was able to have the performance, continuation of consistent. Furthermore, the well-being of the personnel policy implementation is crucial of national development due to the human capital could have creative and innovative abilities. The government should adopt a new thinking by destroying legislation determination to overcome this HR crisis to reverse the talent dilemma by three to five years. It is hoped that we can have the international human capital power again to increase our international competitiveness.



Chapter 4 、 The talent competition of the Asian countries

When the era of knowledge economy coming, the industries based by the knowledge stimulation, diffusion and application have been much beyond the limited capacity of the traditional industries. With the knowledge innovation and cultural accumulation, the human economic civilization was from Knowledge-based Economy) towards Creative Economy. In the past, the only tangible goods and services could contribute to the trading. Nowadays, the "brain", "creativity", "innovation" of the creative economy era has been replaced by "land intensive" and "labor-intensive" industries. The creativity generated from the design, the intermediate processing and to marketing products will be a global innovative industry chain into the upstream and downstream integration. The creative industries become the next next industries how to make the creativity into the products, services or industry only through cultivating high-quality human capitals.

Human capital is a resource of the strategy. The core of the human resources strategy is to cultivate, attract and recruiting the human resources. The development of enterprises shall be focus on the research and development of the human capital in order to keep the long-term development. The phenomenon of "human capital is flow around the world" in the wave of globalization that is aware by many countries. Thus, they have snatched human capital aggressively, especially Asian countries. Among the four Asian tigers, the industries of Korea and Taiwan are competitors, but complementary in human capital. The Korean government has a great confidence in their personnel training compared with Hong Kong and Singapore that lack of resources only through recruiting the talents to maintain their international competitiveness. On the other hand, due to the rapid economic development of China with Taiwanese investment, China and Taiwan have the cooperation-competition relationships and

it is significant important to observe the China development by the global consideration. This study will make more discussions on the Chinese personnel policies. Hong Kong, Singapore, Korea, and China on the talented person snatching and application will be respectively shown as follows.



Section 1 · Hong Kong

Although Hong Kong is only a city, it is far more than any other cities of the international status. In the British colonial period, it has become a financial center in Asia. After returning to China on July 1, 1997, the economic strength increased rather than before and is accessed by international affirmed⁴³. Hong Kong has been the world's freest economies by the Heritage Foundation (ATF) for the 18 consecutive years. The World Economic Forum (WEF) reported in the Financial Development 2012 that Hong Kong has been the first ranking and the second ranking for two consecutive years in the business environment. World Bank (WB) 2012 surveyed 183 economies on the global business environment that Hong Kong was ranked the second. International Institute for Management Development (IMD) in Lausanne, Switzerland announced the World Competitiveness Yearbook 2012 that it was top in the list out of the world's most competitive economies for the second year.

According to the official statistics of Hong Kong, its population reached 707 million people, including ethnic Chinese and foreigners, 92% and 8% respectively. The population density of Hong Kong is up to 6,540 people per square kilometer, one of the highest density regions in the world. Although it faces the cramped population and lack of resources, the HRD is still heavily occupied a large part of resources. In addition to the stable growth in the number of study abroad each year (Figure-5 The amount of Hong Kong students studying in USA, 2002-2011), the performance of higher education is excellent. According to the best world University Rankings of the US News & World Report 2012⁴⁴, the University of Hong Kong, Hong Kong University of Science and Technology, Chinese University of Hong Kong and The City University of Hong Kong were rated by 22,33,40,95 respectively. In such a

⁴³ 香港文匯報，《自由經濟體 18 連冠》，2012 年 11 月 8 日。

⁴⁴ <http://www.university-list.net/rank1.htm>

small place, it is not easy to have the four top universities in the world that the academic standards are the leader of the world. It continuously uses all kinds of different ways to attract more foreign professional workers in to Hong Kong and related practices are as follows.

4.1.1 University Recruiting: The government specifically recruits the outstanding students of the Mainland China and other countries in Hong Kong and can settle and work legally after graduation. The City University of Hong Kong targeted the school scores more than 70 of the Taiwanese high school graduates in 2012 admissions and offered the highest of 160,000 Hong Kong dollars full scholarship and 120,000 Hong Kong dollars tuition-free scholarship a year. Nowadays, The City University of Hong Kong has more than 20,000 students that are more than 3,000 students from China, Taiwan, Korea and India and recruited more than 30 Taiwanese students this year.

4.1.2 Quality Migrant Admission Scheme⁴⁵: With the aim of attracting talented people of the world to settle and work in Hong Kong, the QMAS set up admissions criteria under which applicants could be admitted to residence in Hong Kong without the prior offer of local employment required for a normal working visa in order to enhance Hong Kong's global completion. The majority is the Chinese entertainers and athletes.

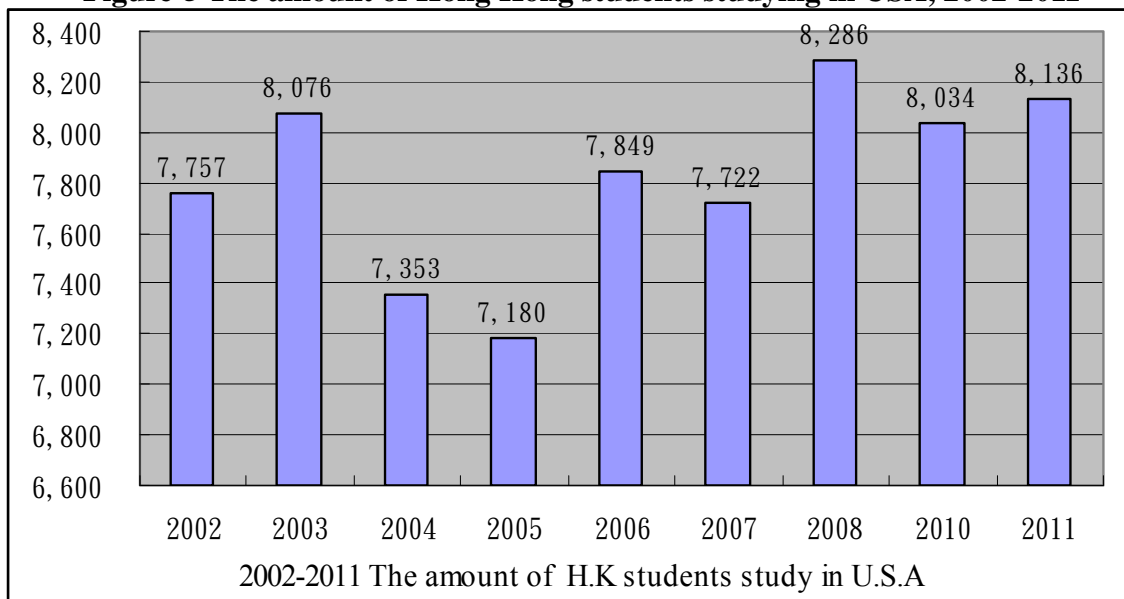
4.1.3 The general people: The people would like to apply working in Hong Kong, who meeting the normal immigration requirements could stay for one year without any restrictions of the other stationary conditions. After living in Hong Kong for 7 years, including during schooling and job, they can obtain the permanent residency that can

⁴⁵ 香港特別行政區政府入境事務處，《優秀人才入境計畫》。"Quality Migrant Admission Scheme (優秀人才入境計畫)" introduced a quota plan. The purpose is to attract the best talents from abroad in order to enhance the Hong Kong's competitiveness. The plan had been implemented in 2006 according to the plan of the resident of Hong Kong Chinese are Lang Lang (朗朗), Li Ning (李寧), Zhou Xun (周迅), Tang Wei (湯唯), Zhang Zi-yi (章子怡), Ge You (葛優) etc.

greatly fill the talent gap in Hong Kong.

In addition to the technology talented people, the financial sectors actively attract the foreign enterprises, capital and people that the related working visa in Hong Kong is very easy to apply for residence. If staying for seven years, they can obtain the permanent residency entitled of vote rights equivalent to Hong Kong residents.

Figure-5 The amount of Hong Kong students studying in USA, 2002-2011



Ref. Source: Ministry of Education

Section 2 、 Singapore

Singapore is lack of natural resources. The reason of ranking in the developed countries and highly international competitiveness is its multi-racial talented people policies. Singapore has many top of international indicators⁴⁶, such as the first ranking of the easy degree of doing business of the world in 2012, the first ranking of the density of millionaire families in the world, first ranking of the global prosperity in Asia and the nineteenth in the world. On the other hands, in 2012 World University Rankings, National University of Singapore, Nan-yang Technological University are rated of 25, 47 individually. In addition to good international investment environment, the clean and efficient government with high efficiency and administrative efficiency are more important. The Singapore government relies on the recruiting of the foreign talented people to establish a stable and competitive business environment.

The total population of Singapore is of 5.31 million on June 2012⁴⁷, including the resident population of 3.82 million. The population density is ranked the second of the world, only next to Monaco. However, Singapore government still encourages international talented people immigration mainly due to fertility is from 1.6% in 2000 down to 1.2% in 2011. The Singapore government in view of the policies of encouraging the fertility failure coupled with the loss of local talented people in recent years, especially the young people. More Singaporeans choose to work or settle abroad. There are currently more than 150,000 Singaporeans living abroad and more than 23 million people including the permanent residents. Singapore annually still has to immigrate 20,000 immigrants to keep the population stable quality. If the domestic is unable to provide a high-level working people and the

⁴⁶ 台灣醒報，《全球繁榮指數報告 台灣擠入亞太第二》，2012年10月30日。

⁴⁷ 北京新浪網，《新加坡擬提高女性生育率》，2012年10月10日。

streetscape labor forces, the government shall import from overseas in order to avoid future loss of demographic advantages.

To strengthen the national competitiveness in recent years, Singapore government respectively recruited the talented people of the telecommunications, software, Biotech, financial, and scientific research fields from China, India, Taiwan and Hong Kong. Moreover, it adopted the "Manpower 21"⁴⁸ plan and "Thinking schools and learning nation" direction through the government and international enterprise cooperation to establish the professional training centers providing the professional and technical training. Other related incentives for the various areas of talented people, it provide employment visa of P1, P2, Q1 and a work permit of S pass. As to the professional managers, entrepreneurs and other professionals settled plan, the "Global investors plan"⁴⁹ provides a simple and specialized pipeline for those expect to set up and run a business in Singapore. The policy of "The pass of personal employment" encourages working in Singapore based on individual merit. The Singapore government adopted the principle of "liberalization" that makes skilled migrants easy to obtain the permanent residency. In the profession and investment migration, they can immigrate with their family, and to apply to become permanent residents or naturalized as a Singapore citizen. In academic institutions, the payments of the professors are higher than USA and the foreign teachers can get an additional welfare.

Lee Hsien-loong(李顯龍)⁵⁰, the Singapore Prime Minister, said "The environment is important to attract foreign talented people to Singapore. It can not just look at the figures also absorb their background and experience." The government proposed the three methods including the open and tolerant society, to establish the language environment, to create

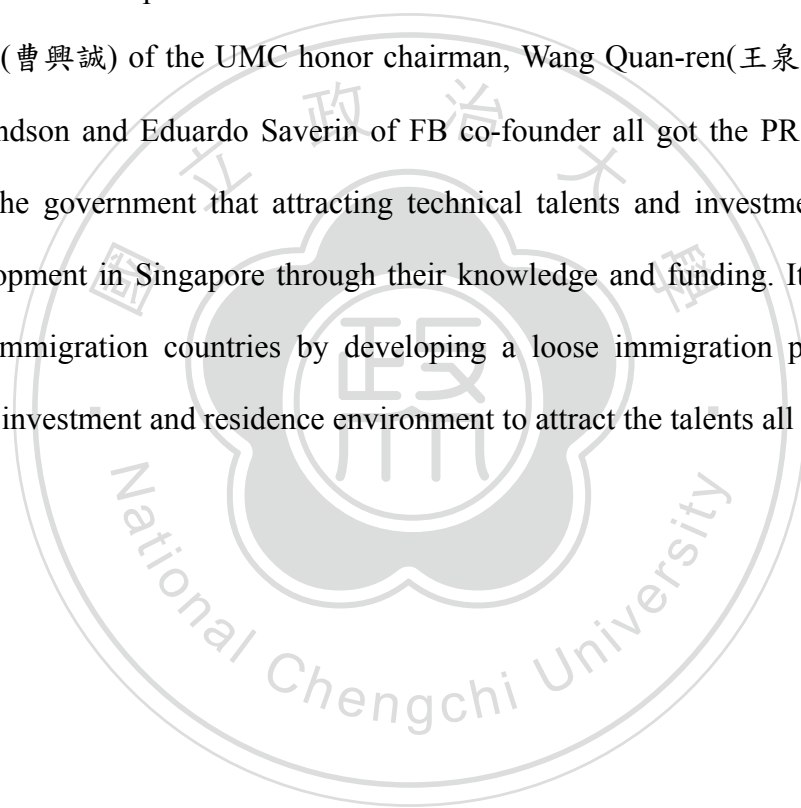
⁴⁸ RDEC,《我國人才培育政策之研究》。

⁴⁹ 聯合晚報,《吸引人才／星創就業通行證 韓線上申請簽證》,2012年11月16日。

⁵⁰ 明志科技大學江子安教授,《新加坡吸引世界一流人才》。

economic opportunities. Moreover, it would like to attract the best students to come to Singapore using scholarship system, which requires students have to stay in Singapore for six years after graduation through the positive interaction to attract the talented people staying in Singapore.

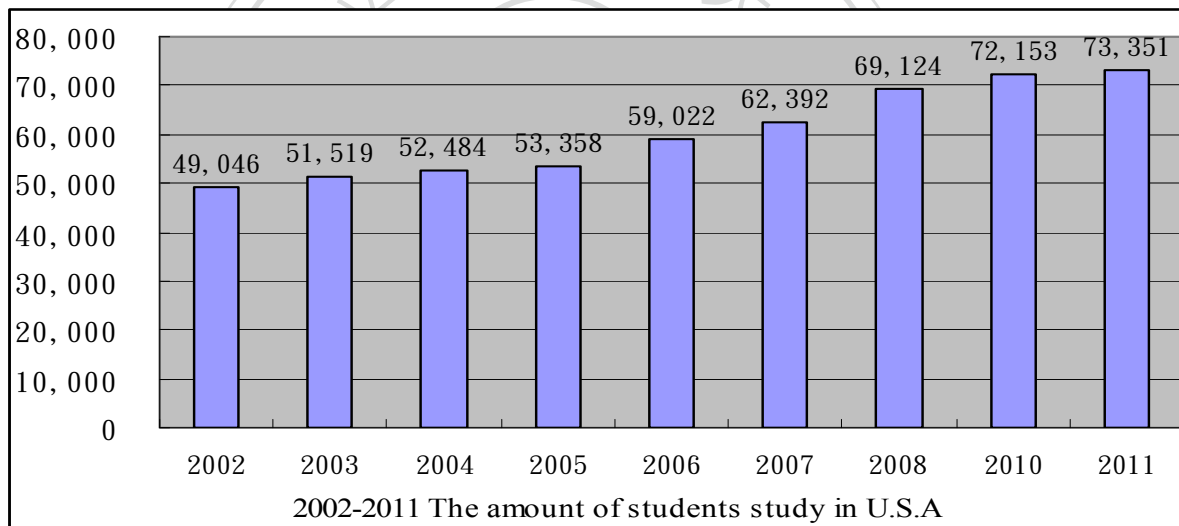
In summary, in addition to the strong role of the Singapore government, the local social conditions and stable political environment is the incentives of attracting foreign talents. Robert Tsao(曹興誠) of the UMC honor chairman, Wang Quan-ren(王泉仁) of the Formosa Plastics grandson and Eduardo Saverin of FB co-founder all got the PR of Singapore. It is known by the government that attracting technical talents and investment immigrants can bring development in Singapore through their knowledge and funding. It becomes the most successful immigration countries by developing a loose immigration policy, and actively creating the investment and residence environment to attract the talents all over the world.



Section 3 、 Korea⁵¹

Korea is a single racial country with the high national identity by it people. The Korean government believes that the students studying abroad are willing to return to Korea because of special cultural background (Figure-6 The amount of Korea students studying in USA, 2002-2011). The higher education of the Korean is sufficient to develop high-tech industries that it attitudes of recruiting overseas talents is not as positive as Hong Kong, Singapore and China.

Figure-6 The amount of Korea students studying in USA, 2002-2011



Ref. Source: Ministry of Education

In the Past, Korea open to foreign talent have always been conservative (Table-7 The foreigners by Nationality in Korea in 2000) that the degree of openness is more conservative on immigration issues than Taiwan. In addition to the introduction of foreign workers was latter than Taiwan 7 years, it is not positive for recruiting the foreign white-collar workers. Moreover, most overseas Chinese cannot purchase lands, engage in the financial industry and operate the factories with many restrictions. On the other hands, the investment of the higher

⁵¹ 中天新聞調查報告，《韓攬才：一個天才 養活百萬人》。

education personnel training of the implementation of the "BK21⁵² engineering" during the 1999-2005 period of U.S. 1.7billion per year promoted the development of world-class universities. After BK21 project, the research capacity and research of Korea University has the significantly improved. The numbers of the masters and doctors were 38,000 and 19,000 respectively that set up a good foundation for Korea Higher Education. In 2012, University of Seoul, Korea, ranks 42 of the World University Rankings. With the flow of the international market economy, Korea joined the competition for talents, has gradually eliminate barriers of the restrictions.

Table-7 Foreigners by Nationality in Korea in 2000

Foreigners by Nationality in Korea in 2000	Population	China	Taiwan	Japan	U.S.A	Others
Total	150812	47474	8798	13398	11940	69202
Legislators, senior officials and managers	1766	218	54	376	386	732
Professionals	12310	1042	600	1134	3873	5661
Technicians and associate professionals	8385	2482	239	879	797	3988
Clerks	4762	845	469	1128	645	1675
Service workers	9812	3292	1758	594	543	3625
Sales workers	2530	657	536	420	170	747
Skilled agricultural, forestry and fishery workers	2162	712	31	367	39	1013
Craft and related trades workers	14945	6261	198	135	97	8254
Plant, machine operator and assemblers	8643	2647	56	88	64	5788
Elementary occupations	52376	22406	348	168	191	29263
Not work	33121	6912	4509	8109	5135	8456

Foreigners by Nationality in Korea in 2000 ; Korea Government website

⁵² 海內外教育調研發展動向，《韓國的世界一流大學發展計畫：BK21 工程》，2008 年第 2 期。

In recent years, Korea in the public and private sectors began boldly to employ foreigners. Lee Kun-hee⁵³ of Samsung Chairman said, "A genius can feed a million people" that is enough to show the Korean government and private industries know importance of talents. The most famous example of the government sector was the Lee Myung-bak(李明博) government appointing Li Shen(李參), Germaneness, as the president of the Korean National Tourism Organization. In the private enterprises, employing the foreigners are more obvious such as the Korean Chamber of the free economic zones recruiting Jin He-lin(金河蓮) from the Tianjin Riverside New Area of China served as the Director of Incheon investment Strategic Planning Section. The enterprises use their own money to employ foreigners that can have more concessions. A large number of Korean companies hiring foreign labors have become a common phenomenon and Korea signed the FTA with multination. The foreign enterprises and foreign talents have also entered into Korea.

With the openness of the economy, Korea is gradually loosening its personnel policies. In addition to promote the three-card system⁵⁴ (IT Card, Gold Card, and Science Card), the Korean government launched "2011 Foreigners Policy Trial Plan" in 2011, in order to attract the foreign talents and provide preferential policies for immigration. The Korean government and local groups invested 3,281 million Korean won for the outstanding international students granting of scholarships this year, which building up the databases and mining global talents. The government issues F-4 visa for the Korean people of the border of China and Russia, F-5 for the permanent residency of foreign persons to replace the F2 married immigrants. The people of F2 eligible married immigrants living in Korea are about 13 million. In 2013-2017,

⁵³ 聯合報，《台灣快轉系列：韓攬才政策／國外人才逐步引進》，2012年6月24日。

⁵⁴ CEPA，《亞洲國家人才政策》。

Korea will propose "The second basic plan of immigration policy⁵⁵" as the foundation of recruiting the talents and start the "Hu-Net Korean online visa application system" to supply the facilitation services for the foreign professionals in immigration and in Korea. It is no longer required to apply for government when moving work places that only completing a notification form through official website.



⁵⁵ 聯合晚報，《吸引人才／星創就業通行證 韓線上申請簽證》，2012年11月16日。

Section 4 、 China

The current foreign exchange reserve of China is the first of world and the oil consumption is the second of the world. The amount of trade is the third in the world and the total economic output is the fourth in the world. The rapid rise of China makes the world cannot ignore it that is rapid construction to re-entry into the center of world with more active personnel training to become a real powerful country. After joining World Trade Organization (WTO) at the end of 2001, the foreign enterprises influx funds into China for investment and speed up the transformation of the industrial structures. According to the China Statistical Yearbook 2003⁵⁶, after the economic open in 1992, the proportion of the foreign investment into the economy market in the first, second, tertiary industry were adjusted from 21.8%, 43.9%, 31.3% to 15.4%, 50.1%, 34.1% in the decade. Due to the face of industrial upgrading, the general talents have been unable to meet the development needs. Filling the talent gap in China only is available through the higher education training and high-quality talents.

Since 1993, due to the great demands for the talents, the government launched a series of higher education and recruiting policy to be a pioneer in the higher education internationalization of China in the 21th century and to improve the quality of human resources by recruiting the foreign scholars. The economic competing relationship between China and Taiwan is close. Taiwan relies on China deep as the major flow of talents to China. China by "The talent foundation in the past" and "The talent strategy at present" will be illustrated as below,

4.4.1 The talent foundation in the past

4.4.1.1 From the "211 Project"⁵⁷ to the "985 Project"⁵⁸

⁵⁶ 胡宇芳 (2004), 《二十一世紀初中國大陸「人才強國」策略之分析》, 頁 5。

⁵⁷ Wikipedia. "Project 211 (211 工程)" refers to the 21st century one hundred key universities in China”。

In 1993, the higher education of China began to be planned and implementation of construction of "Chinese one hundred key universities of the strategic policy in the 21st century" ("211 Project"), referring to be focus on building one hundred colleges and universities and key disciplines in different period. It has improved greatly in the quality of education, scientific research, management standards and school effectiveness in 2000. It was hoped that a number of colleges, universities, disciplines and professional are approached or reached the standard construction of world-class universities in the early 2000s.

In May 1998, the government announced "The building a number of the world's advanced level class university" ("985 Project") that the adjustment of the "211 Project" to promote the university key disciplines with the establishment of the regional characteristics and the development of industry characteristics as the target. The "985 Project" is responsible for promoting the construction of international or world-class university, which established the development strategy of the Chinese higher education pyramid. In 2012 of the World University Ranking, Peking University, Tsing-hua(清華) University, Fu-dan(復旦) University were rated as 44, 48, and 90 respectively and gradually reached the goals of the construction of the world-class universities.

"211 Project" and "985 Project" are still differences (Table-8 The comparison of the objectives and functions of "211 Project" and "985 Project"). However, the

⁵⁸ The "985 Project (985 工程)" is a project that was first announced by CPC General Secretary and Chinese President Jiang Ze-min(江澤民) at the 100th anniversary of Peking University on May 4, 1998 to promote the development and reputation of the Chinese higher education system. The project involves both national and local governments allocating large amounts of funding to certain universities in order to build new research centers, improve facilities, hold international conferences, attract world-renowned faculty and visiting scholars, and help Chinese faculty attend conferences abroad..

common goal of the two projects is for the construction of key disciplines and based on the development of post graduation education. "985 Project" is promote the upsurge development of researching universities as the hot topics of comparison among the elite universities, such as the World University Rankings, the international retrieval system SCI, SSCI, EI, ISTP rankings, the funding ratio, the ratio of graduate and undergraduate international students enrolled etc.

Table-8 The comparison of the objectives and functions of "211 Project" and "985 Project"⁵⁹

		211 Project	985 Project
Objective	1	Striving for a number of colleges and universities to approach or reach the academic standards of a world-class university in the 21st century.	Building world-class universities and disciplines
	2	For the selected schools continue to focus on the construction of the research, teaching standards to reach the domestic leading position.	Explore the new mechanism and introduce a number of world-class academic leaders of the talents in the world-class universities.
The focus of the development		Key disciplines, public service systems	The whole and key disciplines
Objects		64 institutions and more than 600 disciplines of the "95 Plan" period; 99 institutions and more than 800 disciplines of the "15 Plan"	The first phase of the project, 34 schools; the second phase of the project, 38 schools, and 39 schools so far
The method of filtrations		Expert review and regional balance	Selected from the elite to the regional balance
Sources of funding		Countries (department), local and the higher education matching funds	Central special funds, a civil mobilization of the central and provincial funds

Source: Ministry of Education of China (2004); 陳學飛 (2003:33)

4.4.1.2 Academic awards and 「Cheung Kong(長江) Scholar Achievement Award」

In 1994, China announced "Ten Million Project Plan(百千萬工程計畫)" to

⁵⁹ 湯京平，《中國大陸暨兩岸關係研究（台北：巨流圖書公司）》，2011年9月第一版第一刷，頁377。

promote the academic reward fund that aimed at cultivating the leaders of century academic and technology in natural disciplines. There are two main measures.

4.4.1.2.1 The staff is exceptionally promoted

The Chinese government screening the criteria of papers and publications is through the "Special Employment" or "Low vocational and high recruits", which the promotion of young professors to above the associate professor, while allowing them to manage 2-3 research projects to encourage the grading and quantitative of the academic research papers, books and journals.

4.4.1.2.2 Setting up the flexible systems

The Chinese government allows the universities hiring the part-time lectures, hiring the young lectures through the contract and the postgraduate students as the assistants, such as Tsinghua University established the Doctoral assistant system and Huazhong(華中) University of Science and Technology double-employed to attract renowned scholars as the lectures. The establishment of Cheung Kong Achievement Award funded by Li Ka-shing (李嘉誠) of the Hong Kong business person in 1998 is as the highest academic awards of the China, which the first and second prize can be offered 1 million and 0.5 million respectively with effectiveness of the implementation currently (Table-9 The recipients of Cheung Kong Achievement Award). In the same year, the Ministry of Education set 500-1000 distinguished professors in the key disciplines and the appointee is entitled to an annual allowance of 100,000 yuan. The eligible qualification shall be under 45 years old and screened and hired by the Assessment Committee organized by the local and international experts. The combination of Youth excellence Award including the cross-century talents

training plan , the help of outstanding young teachers funded project and related projects are still running, which not only driven by the local government incentives, also academically quantization and the foundation of the academic journals grading.

Table-9 The recipients of Cheung Kong Achievement Award

	First prize	Second prize
The first session	Shanghai Second Medical University Chen Zhu Hunan Medical University Xia Jia-hui	Tsinghua University Fan Shou-shan
The second session	Northwestern University Shu De-gan	
The third session	Nankai University Zhang Wei-ping Peking Normal University Li Xiao-wen	
2005	China Agricultural University Li Ning	Institute of Genetics biology,CAS Lee Jia-yang Second Military Medical University Cao Xue-tao The Chinese University of Hong Kong Sung Joseph
2006	Institute of Zoology,CAS Zhang Ya-ping Southwest Jiaotong University Di Wan-ming	The Chinese University of Hong Kong Lo Dennis Peking University Fang Jing-yun
2007	Life Sciences Award : The Chinese University of Hong Kong, Chan Hsiao Chang Engineering Science Award : Harbin Institute of Technology, Ma Jun Environmental Science Award : Ecological Environment Research Center, Jiang Gui-bin	
2008	Physics and Chemistry Science Award : China University of Science and Technology, Chen Xian-hui Life Sciences Award : Peking University, Cheng He-ping Resources and Environment Science Award : China University of Science and Technology, Zheng Yong-fei Information Science Award : Beihang University, Zhang Guang-jun Engineering Science Award : Shangha JiaoTong University, Lin Zhong-qin	

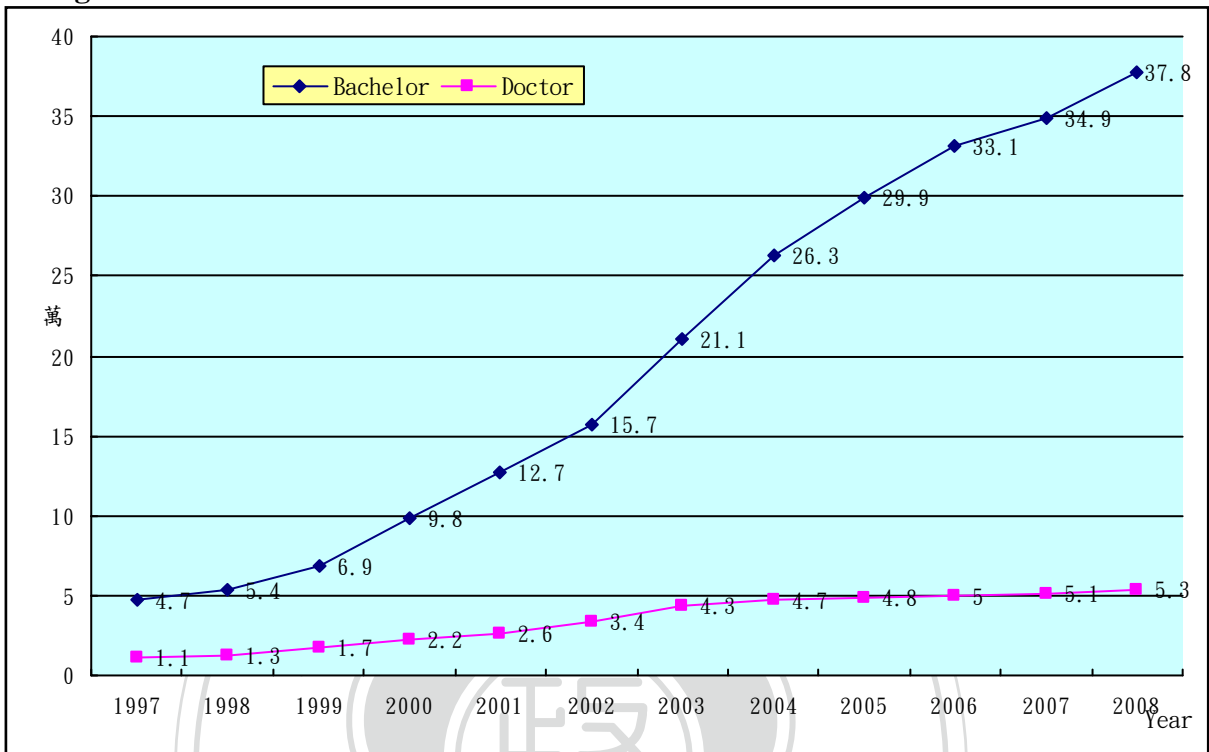
2009	Physics and Chemistry Science Award : Dalian Institute of Chemical Physics, Yang Xue-ming Life Sciences Award : Xiamen University, Han Jia-huai Earth Sciences and Environmental Sciences Award : Hunan University, Zeng Guang-ming Engineering Science Award : Northwestern Polytechnical University, Zhu Xiao-ping
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Ref. Resource: The Development Center of China Ministry of Education, Science and Technology

4.4.1.3 The Diversities of Higher Education

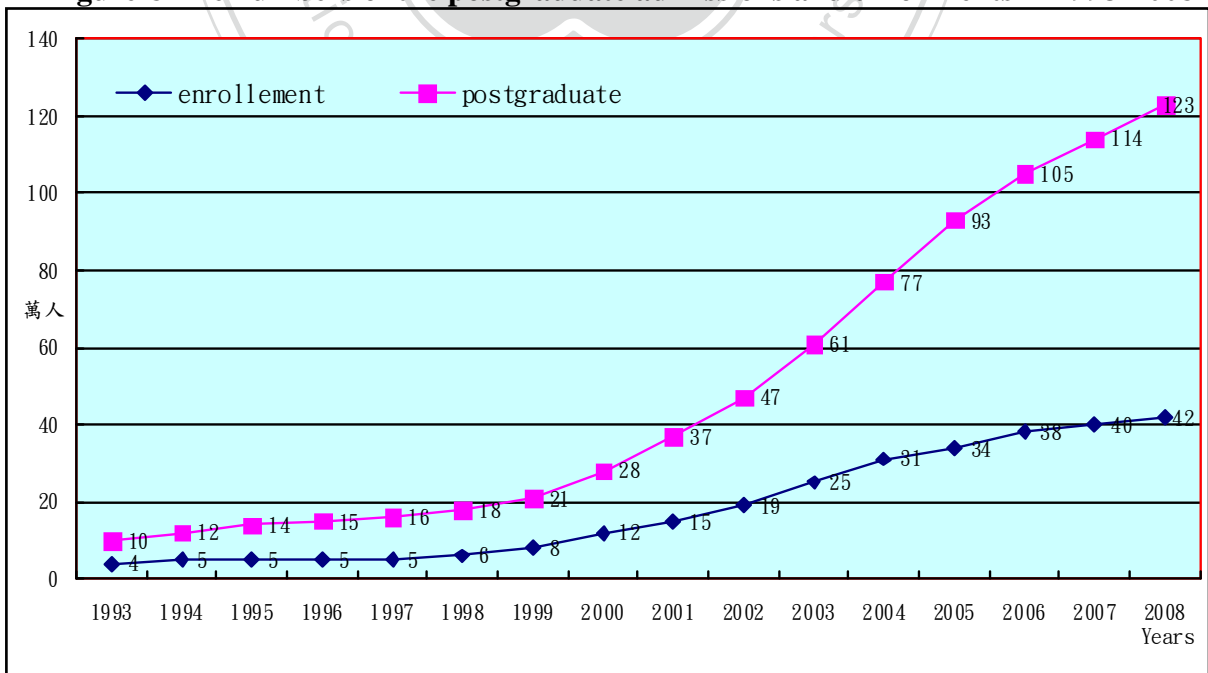
In the mid-1990s, the master and doctoral education of China is benefit from the changes of the job and education market. Thus, the enrollment of the master and doctoral students suddenly increased from 47,000、11,000 to 378,000、53,000 respectively from 1997 to 2008 (Figur-7 The enrolment numbers of the master and doctoral students in 1997-2008). The numbers of the postgraduate admissions and enrollments increased from 50,000、160,000 to 420,000、1230,000 respectively (Figure-8 The numbers of the postgraduate admissions and enrollments in 1993-2008). During this period, there were three important changes of postgraduate schools institutionalized, the rights of evaluation of postgraduate students gradually decentralized to the local and the diversification of Master Education. Due to the expansion of the higher education in China too fast, the ineffective supervision of the local government, the differences of information between urban and rural areas and the variety of school teaching quality greatly induced the increasing of an unemployment rate of the Chinese university students with the profusion phenomenon of "Snail Clan(蝸族)" and "Ant Tribe(蟻族)" as the threat to the national stability.

Figure-7 The enrolment numbers of the master and doctoral students in 1997-2008



Ref. resource: The website of Chinese Ministry of Education

Figure-8 The numbers of the postgraduate admissions and enrollments in 1993-2008



Ref. resource: The website of Chinese Ministry of Education

4.4.1.4 International learning environment

The higher education presents the three major characteristics after the reform and opening up. The first of all, the elite universities began to interact with the international academic institutions in 1992 under the guidance of national policy, and actively carried out the international academic exchanges. In 1993, the promoting the study abroad policy included the studying abroad supporting, returning encouraging and movement free resulting in the rapid growth of the number of Chinese international students. In the mid-1990s, the implementation of the "foreign intelligence" policy hired the famous scholars or institutions of Europe, America and Japan for the methods of long-term cooperation and short-term teaching to assist the establishment of the new discipline researching room. In the late 1990s, the international exchanges extends to the research, development, training, cooperation and joint ventures from lecturing and the object is extended by the foreign universities to the research institutions, multinational enterprises. It is the best instance to set up 30 research centers of the Tsinghua University in Beijing. The final step is to develop and publish the provisional regulations of international cooperation in running schools and the cooperative education approaches to regulate the schools' set-up, operation and supervision.

In the late 1990s, the higher education deeply influenced by the market economy and the factors of regional differences expanding, the national policy shifted from non-equilibrium to equilibrium and comprehensive well-off stage. Firstly, the human resources are towards the development of human capital. In 1998, the Chinese government approved the Higher Education Act. The higher education is positioned as the cultivation the innovative spirit and practical ability

of the "senior specialists". In 1999, "the education revitalization action plan for the 21st century" was issued by the PRC State Council, which proposed the implementation of a "high-level creative talents engineering". In 2001, the CPC Central Committee launched the "brain power" strategy to cultivate the international talents with the global vision and concentrate the resources in three types of high-level personnel of the party and government, business management and professional technology.

4.4.2 The current talent strategy

The Chinese Communists started its hunting scheme transferred from the "talented nation" to "the powerful country with talented people" by the lightning speed and competition for talents complement to the outside world provoking the leaders nervous of other countries. When many talents enter China, this is not accidental, coincidental instead of the conscious design, and strategy-led. Friedman said that do not just look at China's cheap labor, but pay attention to its white-collar and blue-collar because they are through hard work and learning to change the fate that is the Chinese amazing power. The Chinese current talent strategy is as follows.

4.4.2.1 The implementation talent⁶⁰ strategy

Talents as the key to advancing national development, the future will be transformed from the "talented nation" to "the powerful country with talented people" to aggressively enhance the core competitiveness of the country and

⁶⁰ 中國網,《中國人才戰略的基本內涵》,2005年10月10日。"Brain power(人才強國)" has two meanings: increasing the efforts in human resources development, and comprehensively improve the basic quality of the talent to the "Human Power" into the country with talented people. The focus on the innovation and creativity was the major purposes in order to solicit its talents and create the selfbrand to enhance the comprehensive national strength and international competitiveness.

overall national strength. The Chinese government began to promote a series of personnel in the "12th Five-Year Plan" of the "Incubation", "Maintaining", and "Recruiting" human capital. In 2008, on the implementation of the plan of the central personnel working coordination group ("The thousand people plan"⁶¹) were the introduction of overseas high-level talents to recruit two thousand Chinese scientists, the high-tech talents, the high-level management personnel and entrepreneurs back to China who establish its own brand and recruit talent. In 2010, the implementation of the action plan of "Loyal overseas Chinese returning" (referred to the "enthusiasm program"⁶²) to encourage the students to contribute of the country temporarily who are unable back from overseas. The implementation of youth overseas high-level talents introduction rules ("The thousand talents program"⁶³) is targeting to recruit the overseas young talents of 35 years old. In consideration of Chinese overseas talents pool is only over one million, it launched the "overseas thousands plan", recruiting objects extend to young foreigners under the age of 35, in order to expand the talent database source. Currently, the

⁶¹ 天下雜誌 2011 年 9 月 21 日，第 481 期，《從人力大國邁向人才強國》，第 107-108 頁。

"The thousand people plan(千人計劃)" starting in 2008 was focus on the key disciplines of innovation project and the key laboratories, central enterprises and state-owned commercial financial institutions that mainly in the high-tech industrial development zone park and the introduction of about 2000 personnel in the key national innovation projects. The main disciplines, laboratories, central enterprises and state-owned commercial financial institutions are mainly in the high-tech industrial development zone park that are focus to support a number of breakthroughs in key technologies, the development of high-tech industry, driven by the emerging discipline of strategic scientists and leading talent innovation and entrepreneurship in China. It is settling-in allowance for personnel welfare grants that was given one million yuan and one million to ten million three-year study fees supporting their children's education, salary, and official housing.

⁶² "The enthusiasm program(赤子計畫)" refers to the Chinese Communist Party to encourage temporarily unable to return to study and work overseas students studying for the national construction services annually through a variety of ways, such as a new strong agricultural group, and so on, in 2010, total of 36 activities selected.

⁶³ "Youth thousands of people plan (青年千人計畫)" from 2011 to 2015, China will introduce vigorously of the 2000 overseas young talents to provide the support for the next 10 to 20 years of technology, industry leaps and bounds and selected candidates that will provide 50 million living allowance 3 years for 1000000-3000000 yuan research funding grants.

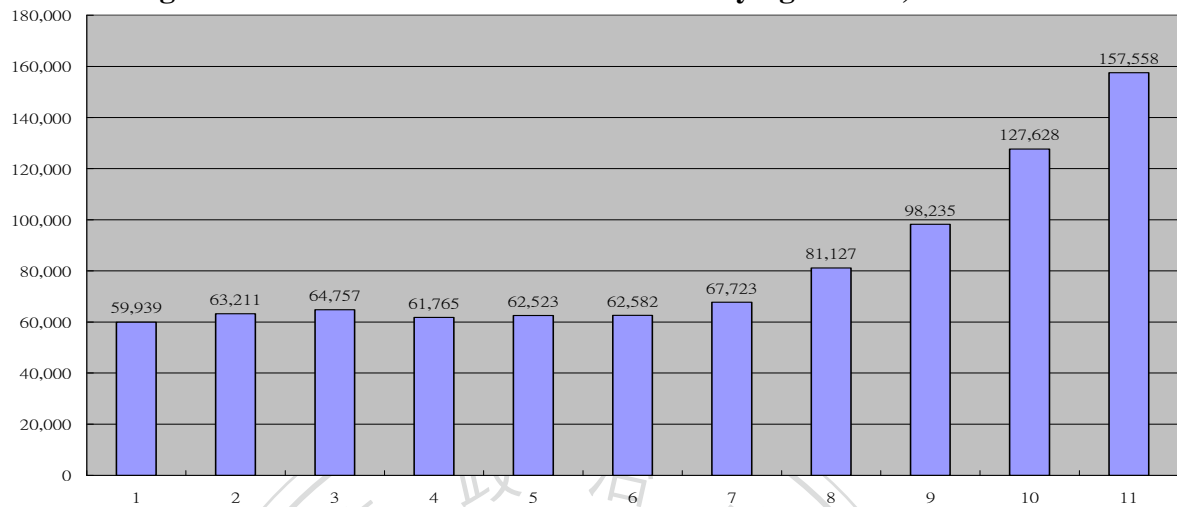
promotion of the various plans performed in the good situation of the brand creation, such as the Chinese self-developed TD-LTE 4G communications equipment was successful authorized of Japan, India and other countries, earning foreign exchange for China and created its own brand for the country forward.

4.4.2.2 The phenomenon of the mitigation talents countercurrent

Hu Jin-tao of the Former Communist President repeatedly stressed in a public speech⁶⁴ that "human resources are the primary resources with the change fast from joining WTO a decade to find that there is not enough talents to enhance the national strength unable to support the large capital big market and the globalization of the world". Li Yuan-chao(李源潮), the Minister of Chinese Communist Party Central Organization Department, said that the cumulative number of Chinese students was 1,390,000 from 1998 to 2007, who returned to the contribution only 390,000 people, only the ratio of 28%. In order to ease the talent problems and talented people returning from overseas, the government increased the students of studying overseas (Figure-9 The amount of China students studying in USA, 2001-2011) as the largest global exporting study countries in the twenty century. In addition, the Beijing Zhongguancun Science and Technology Committee has annually held two overseas study tours to establish a liaison office in the United States for returning talents in 11 consecutive years. Establishment of liaison offices in the US, Japan and seven countries, targeting the scientific and economic fields, takes initiative, directly facing the overseas talents back to work. The "customs personnel in the SAR" has successfully attracted 20,000 returned persons of 6,000 new companies to increase the talents scale fast and efficiency.

⁶⁴ 天下雜誌 2011 年 9 月 21 日，第 481 期，《從人力大國邁向人才強國》，第 102-103 頁。

Figure-9 The amount of China students studying in USA, 2001-2011



Ref. Resource: The Department of Education of U.S.A

4.4.2.3 Active involvement of the central and local government

To break through the concept of "the traditional remuneration regulations of the hunting talents" is the work of the central and local goals of setting the "talent special region". As to the central government, it authorizes the industries strategies such as petroleum, coal, telecommunications and transportation, in the face of industrial restructuring and international standards, which led by the central enterprises and state-owned enterprises, the requirements in the oil, National Grid, the Aluminum Corporation of China, China Telecom and China Shen-hua(神華)⁶⁵ enterprise to build the Technology Park and Research Institute to top talent from overseas and domestics in three years establishing a number of studies of future energy technology research team to assist enterprises in the development and application of new technology and produce the independent innovation technology.

⁶⁵ China Shen-hua(神華) Group is one of the selected demonstration enterprises for the "Thousands of people plan" which set up a low-carbon clean energy research institute in Beijing supporting 2% annually revenue to the R & D fundings. The plan has recruited two hundred talents and forty overseas returnees within two yearts that containing two Taiwanese.

As to the local government, Wang Yang(汪洋) of the former Party Secretary of Guangdong Province stated that there is no genuine multinational companies in China instead of one three trillion dollars of foreign exchange reserves in China that must shift from the investment to OEI. The provinces and municipalities not only invite the experts to talk about the human capital, but local officials should recruit talents overseas.

4.4.2.4 The improvement significantly of the quality of human resources

In the past, China was through the cheap labor and preferential measures attracting the foreign investments⁶⁶. Gradually, with the wages and raw material prices increased, the environmental awareness is high and the labor situation of human rights defenders with the economic development, which forcing the Chinese industry must face restructuring. For the transformation of human qualities and the implementation of "rejuvenating the country through science and education" strategy in the country, Hu Jin-tao of the former President of the Communist Party announced that the "Long-term Talent Development Plan" and "The National Long-term Education Reform and Development Plan 2010-2020" that expected to train the hundreds of millions of high-quality workers, professional and technical staff and a group of top creative talents to implement the "Talent Strategy" in a decade. The Chinese government believes that the talents are not attracted but hired or stolen, then sent to the global talent summoned. As to the talents of the Nobel nomination without winning to take "proactive recruiting with the global wages and provide an excellent position". On the other hand, the PRC State Council Bureau of Foreign Experts visits the ethnic Chinese scientists, entrepreneurs or

⁶⁶ 天下雜誌 2011 年 9 月 21 日，第 481 期，《從人力大國邁向人才強國》，第 104-111 頁。

organizing talent briefings locking the top talents in all areas. It is expected to recruit business management staff of 42 million people, R&D staff of 3.8 million people, 4 million of innovation and technology talent and 8 million people in the medical and health personnel in order to implement the educational transformation of the national talents⁶⁷.



⁶⁷ 中天新聞調查報告，《經濟轉型需求 大陸布局人才庫》。

Chapter 5 、 The Taiwanese Personnel Status

There is an old saying that "The Mountain endures the soil, and it could be such big". The River accepts the small streams, and it could be on its depth." In the era of globalization, human mobility across borders of the talent competitions becomes the world trend. Due to the convenient transportation, commercial and industrial development, and very frequent population movements between the countries in the world, the migration is a common phenomenon in the world. According to the United Nations statistics⁶⁸, there were 190 million global migrations under the trends of globalization and the knowledge economy, the international talents moving as a global technology and knowledge exchange media can promote international economic vitality and efficiency to the white-collar workers with the competitive knowledge, who have become the main human capital under the world competing⁶⁹.

The national immigration policy involves countries the attitude of accepting the foreign migrants, such as sparsely populated countries are in dire need of labor to the development of their land with the open attitudes toward their immigration policies. On the other hand, the countries of high population density and the labor-abundant, they are exclusion for immigrants and take the threshold of a high standard of foreign immigrants. In consideration of national security and interests, economic development, and enhancing the competitiveness of domestic industries are in attracting highly qualified labor force to supplement the weakness of industries that are taken by the most countries⁷⁰.

In the past 10 years, according to the Taiwan National Immigration Agency (NIA⁷¹), the

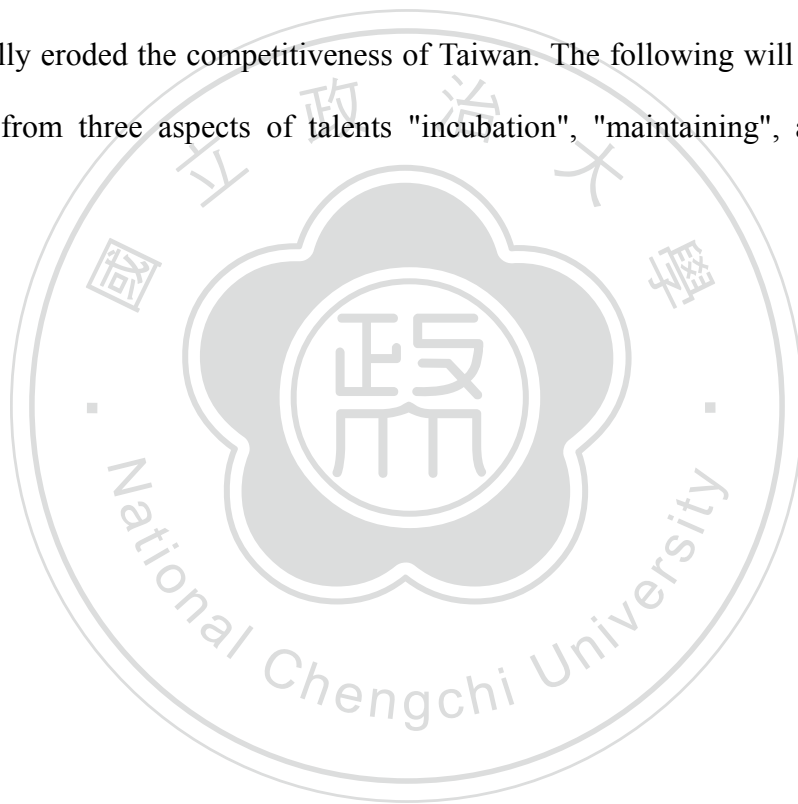
⁶⁸ 三民輔考，《移民政策（台北：三民出版社）》，2011年11月，頁3。

⁶⁹ 行政院，《吸引全球外及優秀人才來台方案-行政程序簡化部份》，2008年12月3日。

⁷⁰ 許義寶，《入出國法制與人權保障（台北：五南出版社）》，2012年7月，頁63-64。

⁷¹ NIA

numbers of legal resident alien are about 46 million people. The white-collar workers and technical staff accounted for only about 20 thousand people of about 410 thousand foreign workers, and removed out 20-30 thousand Taiwanese talents per year, which the majority is the professors, engineers and other white-collar. Overall, Taiwan has become a high-level human "net exporting countries". According to the OECD statistics⁷² in 2012, Taiwan was the highest of the world in the higher education Brain Drain and the talent imbalances in Taiwan have gradually eroded the competitiveness of Taiwan. The following will be the status of the talent flow from three aspects of talents "incubation", "maintaining", and "recruiting" as follows.



⁷² 今周刊，〈22K 逼走台灣高材生〉，2012 年 11 月 26 日，頁 112-132。

Section 1、Talents incubation

Taiwan lacks the natural resources and the talents are the most important resource as the key of the national development. Thus, actively to cultivate the talented people is the fifth key point to enhance the Taiwanese competitiveness. The progress of the community does not depend on the low economic value of the human resource, but the high economic value brainpower that university degrees become the basic qualifications now⁷³. Under the ubiquity of higher education, the vast majority of students found the jobs not related to their learning due to the Academic advancement and parents' wishes. For example, the President of Academia Sinica, Wong Chi-huey's daughter⁷⁴ abandoned Harvard University to study Arts and become a painter. The Council for Economic Planning, Yin Chi-ming's (尹啟銘) daughter got the PhD but then studied music after graduation. The Minister of Economic Affairs, Shih Yen-xiang's (施顏祥) daughter was admitted her doctoral degree of National Taiwan University but chose Taiwan University of Science and Technology. Then, she abandoned the doctoral research and admitted to the TRA assistant level. These are the defeat for the personnel training, not only a waste of educational resources but also squandering time. The policies of Taiwan personnel incubation will be stated as follows.

5.1.1 The aspect of the basic level talented people

Under the long-term academic advancement in Taiwan, the concepts of "diploma" and "achievement" have always been deeply rooted in the Chinese community. Thus, the practical course is transferred to the theory teachings that induce the theory and practice cannot be linked. The technical and vocational educations are neglected, resulting in technical and vocational education personnel training imbalance and be lack of the

⁷³ 楊志良，《台灣大崩壞（台北：天下文化）》，2012年4月27日第一版，頁25。

⁷⁴ 聯合報，《台灣人才流失 翁啟惠女兒：別管我們》，2012年8月17日。

basic technical personnel. Moreover, the higher education is getting popularization because the 5-years colleges of training the technical people in the past have transformed into a Technical College or University of Science and Technology recent years. Although this policy meets the needs of students in their studies, the personnel training of technical and vocational imbalance gradually reducing the opportunities for practicing implementing instead of increasing the academic theories coupled with a lack of practical experience of the technical and vocational education teachers. These factors provided student internship opportunities inadequate and incentives failed to provide the opportunities for student internships. The cooperative education is on the edge of the law lead the student internships content that is not easy to be corresponding with the course of study and professional skills.

5.1.2 The aspect of the mid-level talented people

5.1.2.1 Lack of well- training system

The talent potential of Taiwan in the research and development, innovation, invention of the outcome in the various fields are glory (Table-10 The Performance of Taiwan Scientific Exhibition 2011-2012). It often come to the fore in the international science fairs or design contest, such as the Intel International Research Exhibition⁷⁵, Nuremberg Invention Exhibition, Croatia Invention Exhibition, Tokyo Innovation and Invention Exhibition. This group of excellent R&D and innovation talents is the country's future development pillars with the contradiction of entrance examination system and the lack of a systematic training system, which ruined many talents creativity and the future. In order to cultivate the talent of basic scientific research, The Ministry of Education (MOE) in 2009

⁷⁵ MOE.

held the first session of the "Science Classes"⁷⁶, selected 145 students from Taipei Municipal Chien-Kuo(建國) High School and six star high schools in cooperation with the National Taiwan University, National Tsing Hua University, etc. In the classes, they allow the high school students to do thematic research and analysis. This year, the first group of the graduates of the University selecting, who still selected the traditional top departments mainly including the electrical, mechanical, medical departments and only 33 persons who had chosen the basic science as their further studying. In the Science Classes, there were 76 students entering into NTU that had a large gap with The Ministry of Education targets.

Table-10 The Performance of Taiwan Scientific Exhibition 2011-2012

Year	Item	Performance
2011	ACM - ICPC	The 14th of the world of National Taiwan University
2011	World Skills Competition	1 Gold medal, 4 Silver medal, 3 Bronze medal and 15 Champion
2012	International School Cyberfair	23 platinum 28 gold, 24 bronze medal and 4 special award, ranking the first
2012	The Tokyo World Innovation & Invention Exhibition	26 gold, 19 silver and 5 bronze medals, won the team championship
2012	Croatian Invention Exhibition	15 gold, 6 silver, 6 bronze and 5 special award, ranking the first
2012	Poland International and Invention Exhibition	46 gold, 33 silver, 3 bronze and 4 special award, the group ranking the first
2012	British international research and special exhibition	2 Conference Award 4 Special Award

Source: MOE

5.1.2.2 One does not do what one has learned in the domestic education

The rate of expansion Universities of Taiwan under the education policy is too

⁷⁶ 聯合報，《首屆科學班上大學 多數仍選醫科》，2012年11月12日。

quick that a vocational college was upgraded to a specialist one and a specialist college was upgraded to the University of Science and Technology. Those may cause the degree of Bachelor's Degree but only likes the degree of High School⁷⁷ and the degree of Master Degree but only likes the degree of Bachelor that not only affects a whole generation of young people a tremendous future and the wastes of national education resources. At the ended of 2010 school year, there were 164 colleges totally that the density of the Higher Education is the highest in the world. The elite education becomes the general education by the higher education increased substantially instead of the quality of education not be enhanced that the gap of learning and use is growing and the employment force of incubating human resources is weak. Those factors led the students' lack of international competitiveness and educational talents unable to meet the industries' demand.

On the course, the university curriculum planning emphasis on the basic subjects learning and ignore the technical skills that are difficult to respond to the industrial structural changes. Moreover, the curriculum design is lack of cultivation of the working attitudes, stability, resistance to stress, expression and communication skills, teamwork that caused the gap of the school cultivating the talents and industry demands.

More and more students enrolled in further education or employment examination for their future study or a career. Most of them are focus in preparing for the exam by postponing their graduation. In 2011, the numbers of University delaying graduation⁷⁸ are 54,082 people and the proportion is 19.1%, which not

⁷⁷ 楊志良,《台灣大崩壞(台北:天下文化)》,2012年4月27日第一版,頁49-50。

⁷⁸ MOE

only wasted of manpower and school resources, but also led to the students in the weakness motivation of active learning and knowledge.

There are more than a million people of postgraduate degrees in the employment work, but the job is still not easy in high-quality human talents with the face of Taiwanese industrial transformation and the global economic recession. Those are leading to the highly educated people who cannot find the jobs seriously instead of the case of the lack of workers by the basic level jobs. The government only can resolve this situation by the programs of the introduction of college graduates to the corporate workplace internship (22K), the promotion of the post-doctoral researcher into the industrial employment (57K), 1000K. On the other hands, the government expanded the numbers and fields of the research and development of alternative service soldiers⁷⁹ who can learn from practicing or join the Department of Defense officer ranks temporarily to solve the problems of high-quality personnel employment.

5.1.2.3 The number of study abroad without increasing

In the recent years, most of the students decided studying for their further degrees in Taiwan by many master and doctoral programs coupled with the language and environmental advantages or receiving public scholarships to study abroad for further education (Table-11 The admitted numbers of each type of scholarships 2009-2011). The number of U.S. students was decreasing year by year (Figure-10 The amounts of Taiwan students study in the United States 2000-2010). In the past five years, the number of people applied for the visa to study abroad from 1999 to 2008 (Figure-11 The number of students study abroad 1999-2008), including the

⁷⁹ 中央通訊社，《拚經濟 研發替代役擴大辦理》，2012年10月5日。

degrees of the short-term study of the winter and summer vacations and short-term and short-term exchange & project researching. The numbers reached a peak of 37,000 people in 2004 and 2007 and the rest of the number of the year remains about 30,000 people. The elite students at Harvard, Stanford and other top universities from Taiwan were getting fewer instead of the Chinese students that will induce missing the working experience in the Silicon Valley of the United States, Wall Street and industry cluster areas. In the future, this situation will lead to the secession of the high-tech industry and foreign universities and research institutions contacts with the lack of vertical linkages⁸⁰ that will dwarf the talents hunting, academic exchanges and the industrial R&D finally to the lack of competitiveness and the marginalization of Taiwan.

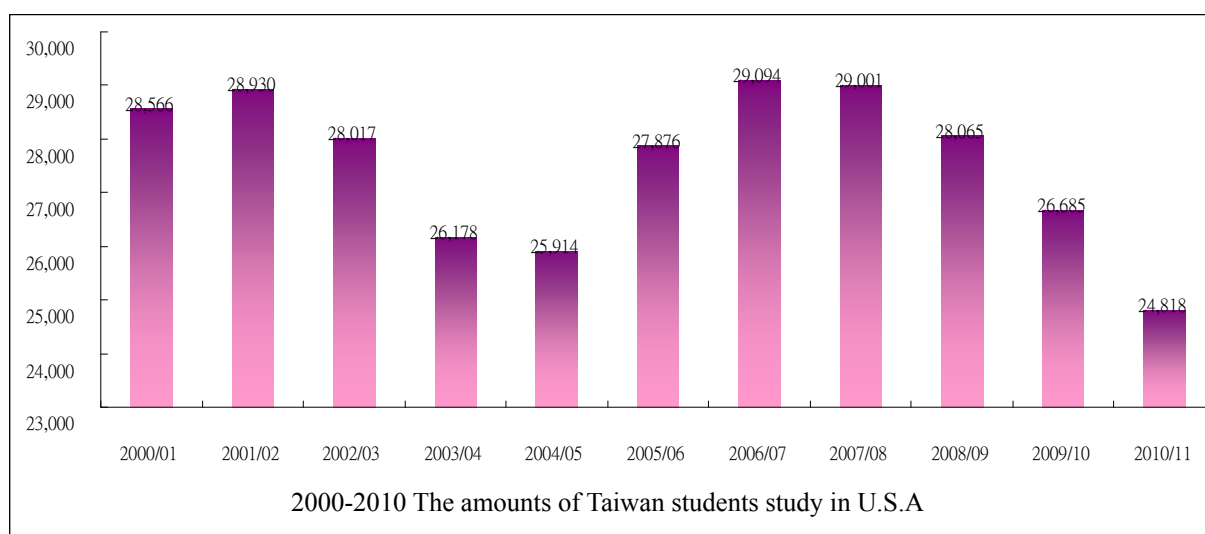
Table-11 The admitted numbers of each type of scholarships 2009-2011

Year	Publicly funded Overseas Studies	Overseas Studies Scholarship	Xuehai series	United States (Japan and Germany) scholarship	EU scholarships	Foreign government scholarships	Loans of Overseas Studies
2009	115	300	632	153	8	220	1,216
2010	122	315	708	107	8	256	1,174
2011	135	330	821	114	8	156	794

Source: MOE

⁸⁰ 天下雜誌，〈年輕經濟學家不回家〉，2008年8月27日，頁64-65。

Figure-10 The amounts of Taiwan students study in the United States 2000-2010



Source: MOE

Figure-11 The number of students study abroad 1999-2008

Year	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
amount	32,162	33,831	26,318	32,525	34,058	37,171	34,991	37,800	33,629	33,881
America	14,878	13,767	10,324	14,054	15,525	16,451	14,916	19,402	15,594	15,890
Canada	2,296	2,433	1,813	2,149	2,140	1,997	3,984	3,266	2,320	2,814
England	7,583	9,548	6,662	9,207	9,248	9,653	7,132	5,885	3,895	3,610
France	562	529	627	580	600	690	723	983	882	935
Germany	345	400	442	402	475	512	606	558	646	702
Australia	2,397	2,894	2,823	2,246	2,679	2,862	2,570	2,370	4,176	3,633
New Zealand	645	740	571	534	498	538	618	596	469	379
Japan	1,696	1,745	1,337	1,556	1,748	2,108	2,424	2,638	3,143	3,253
Others	1,760	1,775	1,719	1,797	1,145	2,360	2,018	2,102	2,504	2,665

Source: MOE

5.1.3 The aspect of the high-level talented people

5.1.3.1 *Diploma does not equal employment*

According to the Ministry of Education statistics⁸¹, there were only 608 PhD graduates in the 1991. But that number increased to 3,846 in 2010 which was 5.3 times of the numbers of 1991. According to the doctoral graduates employment survey by the Normal Teaching and Research Assessment Center over the doctoral graduates by the 2007 academic year, most doctors worked in the university or had research job (61.7% in the academia field, 25.3% in the industrial field and 10.4% in government agencies). Those Ph.D. who were back from the United States entered the academia fields (47.1%⁸²), industrial fields (37.2%) and in the government agencies (15.7%). The ratio of the Taiwan-trained Ph.D. in industries is relatively low and the main reason is that the Taiwan's industries have not been upgraded. Thus, they do not need to develop R&D capabilities and the demand is not high on the doctoral talents. In addition, the universities began to encounter enrollment crisis in recent years due to the low birth rate. When the number of students decreased, the number of teachers will reduce accordingly, and the demands for PhD graduates will be even less than before. It will be no surprise to see those with Ph.d. admitted to the Taiwan Railway as the low-level workers.

In the face of the global competition and industry recycling, the international, interdisciplinary, high-tech and professional management personnel training is not easy. However, the current education system is more difficult to cultivate the industry required professionals by the rigid classification of the college

⁸¹ 聯合報，《不當流浪博士 寧低就領3萬》，2012年9月23日。

⁸² 遠見雜誌，《博士找不到工作，全民花1.44億埋單》，2012年1月，頁246-248。

departments unable to support the new industries international, interdisciplinary and cross-industry talents. Most students are poor in the foreign language skills. The average of TOEIC scores⁸³ of China, Korea Taiwan and Japan in 2011 is 710, 626, 542 and 510 individually of comparative disadvantage on international business and trade competition. The industries reflect the current teacher education system that the courses have been unable to match the practical needs and the inadequate investment of the enterprises in the cultivation of high-level personnel should be improved in the future.

5.1.3.2 Education is gradually moving towards the M-type⁸⁴

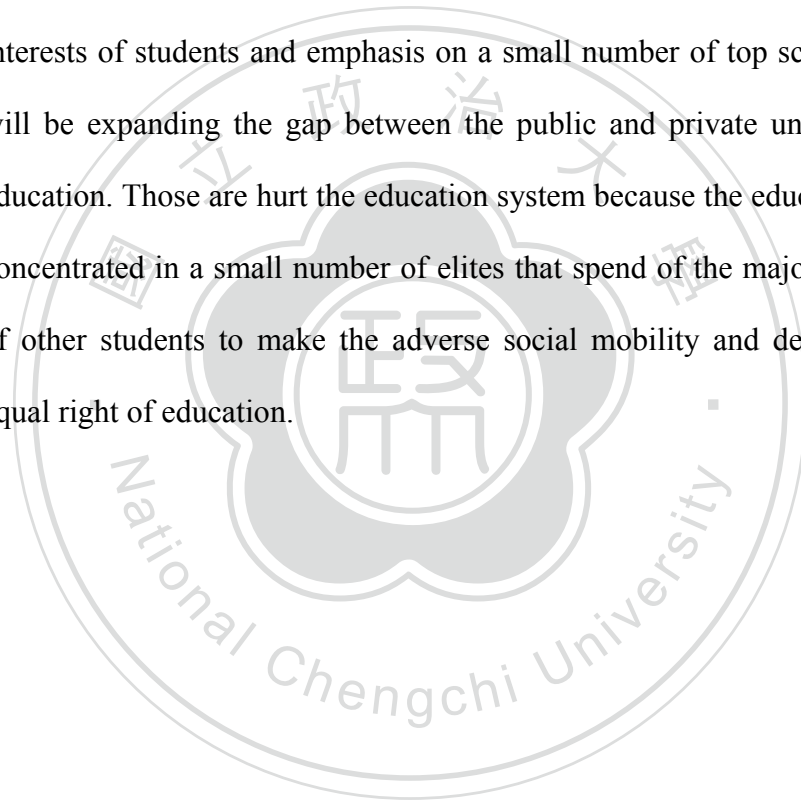
The process of Taiwan's economic development and the economic miracle from the popularization of education, improved rapidly due to the equal opportunities in education as well as the quality of the labor force. In the long time, education is the major pipeline to people who will upgrade their life quality and income, but this situation has been changed. The children of wealthy families has become the mainstream of the National Universities and the children of poor families are concentrated in the private universities with high tuition fees, poor equipment and the unfair teaching opportunities that are resulting in uneven distribution of human capital and the deterioration of income distribution. Meanwhile, the government was in order to compete for the World University rankings. The Ministry of Education expanded the "Aim for the Top University Plan(邁向頂尖大學計畫)"⁸⁵

⁸³ 中國時報，〈多益成績 626：542 數字會說話 韓國英語比台灣好〉，2012 年 10 月 6 日。

⁸⁴ 遠見雜誌，〈從大陸巨富的外移看台灣教改〉，2012 年 1 月。

⁸⁵ As to the plan of the development of world-class universities and top research center, the Ministry of Education will fund a five-year NT \$ 50 billion subsidy major universities to become world-class institutions, research centers program, called five fifty billion plan, a total of divided into two sessions, during the execution of 2006-2010, known as the first of five fifty billion plan. Since 2011, fifty billion plan to start the second period of five years, the plan name changed to "Aim for the Top University Plan".

expected to grant the 12 major universities for fifty billion special budgets in the five years to at least one university into 100 of the World University rankings since 2006. In 2012, National Taiwan University has successfully squeezed into one hundred of the World University Rankings rating as the 80 in the world. This policy was only focus on the famous schools, but ignored the private schools. The subjects are only focus on Science, but ignored Humanities that will sacrifice the interests of students and emphasis on a small number of top schools. Moreover, it will be expanding the gap between the public and private universities of higher education. Those are hurt the education system because the education resources are concentrated in a small number of elites that spend of the majority of the interests of other students to make the adverse social mobility and deprive others of the equal right of education.



Section 2 · Talents Maintaining

After the revolution and opening up of China in 1987, the plants and equipment of Taiwan enterprises shifted to China gradually outward in the huge "Magnet Effect" of the China market that caused by the middle-level managers representing the intellectual, creative, professional or technical personnel facing the outflow. Facing the Human force, capital and technology over relying on China, the impact of Taiwan's industries faced of industry relocation coupled with limited the domestic career development and salary growth that leading a "Brain Drain" phenomenon occurs.

Due to Taiwan's international environment insufficient, the salary conditions cannot be competitive with the neighboring countries that make the overseas hi-tech students are unwilling back to Taiwan coupled with the mid-level government officers early retirement or conversion of the workplace that resulting experience cannot be heritage. Those factors enhanced the "Brain Drain". According to the statistics⁸⁶, the number of the white-collar out of Taiwan is every year 2-3 million people, Taiwan has become a net exporter of white-collar manpower due to the "Brain Drain" and serious human faults, the policy of talents maintaining will be stated as follows.

5.2.1 The aspect of the basic level talented people

When Taiwan traditional industries⁸⁷ complain that young people do not like to do the "dirty, dangerous, high-labor-intensive (3D industries⁸⁸)", Taiwan has signed a working holiday agreements⁸⁹ with New Zealand, Australia and other countries. A

⁸⁶ The term White-collar Worker refers to a person who performs professional, managerial, or administrative work, in contrast with a blue-collar worker, whose job requires manual labor. Typically white collar work is performed in an office or cubicle. ◦

⁸⁷ NOWnews, 《打工旅遊變淘金賺錢? 澳洲湧入大量台灣青年》, 2012年8月21日。

⁸⁸ The 3D industries mean the industries of dangerous, dirty, and difficult characters. ◦

⁸⁹ 東森電子新聞, 《打工度假議題熱 馬總統: 我上任後新增5國可去》, 2012年9月15日。

group of young people flocked to Australia⁹⁰ in the 3D industries or to France as foreign mercenaries⁹¹ that set off the trend of working holiday overseas recently. On the other hand, the workers are shortage in Taiwan that still cannot find the employee as the plumbers starting salary of NT 40,000 dollars⁹². This was a paradoxical phenomenon and explored the main reason by the low salary.

According to the statistic data of Accounting and Statistics Directorate-General of Budget⁹³ in January-August 2012, the average salary of \$ 47,247 after deducting the consumer price index rising in real terms that the average salary of \$ 43,514 with the new low from 1998. A monthly salary of the white-collar workers were back to 14 years ago. The average monthly income is from \$ 50,390 in 2001 to \$42,870 this year for the bachelor degree worker⁹⁴. In 2011, the college graduates starting the salaries of \$26,577 have shrunk to \$885 compared to 13 years ago. The diploma is inversely proportional to the income, which is ironic phenomenon. This younger generation feels helplessness of the jobs by the fears of low pay, hard work and no future, not only caused by people relative deprivation, but also because of the series of the corporate layoffs or unpaid leave caused by the economic downturn. Thus, the students in colleges begin a series of candidates to various government exams in order to avoid unemployment and to find steady work and reject the civil labor that causing the numbers of 2012⁹⁵ registrations and enrollment of government official exam hit a highest record. These are not good phenomenon either in the individual or in society.

⁹⁰ 今週刊，《我是台勞、我來賺錢》，2012年9月17日。

⁹¹ 民視新聞，《台男任法籍傭兵 年薪150萬》，2012年9月23日。

⁹² 大紀元，《不屈就 北市年缺6000水電工》，2012年9月15日。

⁹³ Directorate-General of Budget, Accounting and Statistics.

⁹⁴ 天下雜誌，《教授拼業績》，2012年10月3日，頁112。

⁹⁵ www.moex.gov.tw

5.2.2 The aspect of the mid-level talented people

5.2.2.1 *The impacts would be a tremendous in the industries*

The brain crisis getting serious in Taiwan, the president of Academia Sinica in August 2011 published the Declaration of the talents. Chung-Ming Kuan, the minister without portfolio of the Executive Yuan, warned that Taiwan's human resources would be exhausted if it is not actively resolved that would become the third level countries within 3-5 years. In order to understand the problems met by the enterprises conducted by the talents that the 546 questionnaires were investigated by the 1111 Job Bank⁹⁶ through the internet from August 20 to August 31, 2012.

The results showed that 77% of companies have felt the trend of "talent shortage", in which the fields of the traditional production/ manufacturing, the people's livelihood/ services and business-related services have the deepest influences. The 86% of the respondents found it difficult of the talent strategies because of the high flow rate of the talents (49.45%), the low salaries generally (32.97%), the shortage of talents (28.57%) and grass-roots human resources hard to find (24.18%). The most lack of the talent fields are technical/junior officers (53.3%), business sales (28.02%) and R&D researchers (12.64%). The enterprises hope most that the government will strengthen the technical and vocational education (28.57%) or foster the industrial talents (25.82%) in order to address the current lack of professional talents plight. The manufacturers hope that the government will provide the excellent overseas professionals return plan (8.79%)

⁹⁶ 1111 人力銀行網路問卷調查,《高階難留?! 基層難求?!企業人才困境調查》,8月20日到8月31日,有效樣本數為546份。

to enhance the human qualities of the domestic job market, driven by the overall competitiveness of the country and industry.

Facing of two major problems including the massive outflow of high-level human and the basic technical labor are serious shortage in Taiwan. The high-level manpower is the excess due to the low domestic salary level combined with the labor protecting policies of the government that prevent the foreign high-level personnel working in Taiwan, resulting in Taiwan talents only moving out without moving in. As to the primary manpower shortage, the upgrading of technical and vocational schools in the past decade toward academic development, resulting in the differences of learning and using that training a large number of highly educated generalists, but leading to a serious shortage of domestic low-level or technical professionals. Those indicated that the enterprises complain about the job seekers lack of the professional knowledge, the serious shortage of industrial talents and the paradoxical phenomenon of the high unemployment rate of the highly educated.

5.2.2.2 Increased the willingness of overseas work

5.2.2.2.1 Overseas work

To understand the current situation and experiences of white-collar workers working overseas, the 1,488-internet questionnaire survey of office workers overseas work experience designed by the 1111 Job Bank⁹⁷ from September 8 to September 22, 2012. The results indicated that 77% of surveyed office workers intend to work abroad because of expanding personal

⁹⁷ 1111 人力銀行網路問卷調查，《金飯碗 鐵飯碗 不敵「洋飯碗」？》，9月8日至9月22日，有效樣本數為1,488份。

horizons, developing the larger opportunities and considering the wages and benefits. The 38% of them have been successful in acquiring overseas working experience for an average of 4.37 years. The 94% of the overseas salary is higher than Taiwan and the 62.74% is higher than the average payment. The main countries working overseas are mainland China, United States and Singapore. The 61% of overseas workers are in the Taiwan enterprises that most of them are with doctoral degrees and the master degrees as the second rating. That showed the situation of mass exodus of the highly educated people does exist. In the aspect of the industry analysis, the fields of the highest proportion of overseas jobs are production or manufacturing, information/ technology and trade/ circulation in this indirect proof of the loss of many white-collar workers. The foreign workplaces have the advantages of the well salary structure, more respect for professional and greater respect for private time and space.

The average salary in Taiwan has significantly been behind the neighboring countries for many years that is difficult leaving human talents, for example, starting from NT \$60,000 for Singapore freshman, NT \$70,000 for Korea, NT \$32,000 for Hong Kong and \$22,000 for Taiwan. The average salary of Taiwan is far behind the neighboring countries. The structure of workplace wage in Taiwan is relatively low, compared to the advanced countries coupled with the ubiquity of higher education. Furthermore, the structures of industries cannot accommodate a large number of highly educated people and businesses to provide resources for training and development space that making the Taiwan office workers are willing to work

abroad to enhance the talents training in Taiwan large migrating to the Asian neighboring countries. Singapore, Hong Kong, China and Korea conducted comprehensive poaching talents in the fields of education, science and technology, health, sports, aviation⁹⁸ and other industries of Taiwan. Thus, Taiwan is the aftermath of talent "comprehensive drain" crisis, as the "talent-exporting countries for the neighboring countries. When high-quality Brain Drains while the domestic business owners said that being unable to recruit talent that the key problem is the issue of the payment. If the companies were willing to use reasonable wage to employ the currently higher education talents, the phenomenon of talent shortage might be improved.

5.2.2.2.2 West-ward working in China

▪ With the signing of ECFA, the cross strait directly flights and the airline cut prices that the Chinese tourists and students can enter Taiwan due to the cross-strait policy. For the cultural, economic and trade exchanges between the two sides, the Chinese market has a "Magnet Effect" on the global capital and talents that the job market is also set off a wave of cross-strait. "Human capital required interaction effect" has become a key cross-strait cooperation in the future. In this trend of west-warding to the mainland China, how are the Taiwan office workers willing to work?

In order to understand the west office workers work on the mainland intention, 1,173 internet questionnaire survey of "The office workers

⁹⁸ Civil Aviation Pilots Association statistics, " 25 of the Taiwan Aviation Pilots exodus in the 4 months " 《4 個月 25 人 台灣機師大出走》。

west-ward willingness⁹⁹" designed by the 1111 Job Bank from May 10 to May 24, 2012. The results showed that 77% of the respondents of the office workers intentionally westward to develop in China. The reasons are optimistic about the potential of the mainland market, increasing the personal working experience and developing an international perspective. The most popular types of works are management, business and trade, manufacturing, the basis for the selection of the type of work by "personal expertise/professional", "optimistic about industry prospects" and "personal interests/hobbies. The types of office workers staying in China are the main form of long-term assignments and local appointment. The 57% of office workers now on the development in China have no willingness to return. The 74% of office workers work in China for a higher salary increased by an average of NT 370,000.

5.2.3 The aspect of the high-level talented people

5.2.3.1 Populist rule treated equal

In the civil service system, due to the salary structure of the teaching and research system adopted in the public sector, the academic staff salaries are far below the international compensation levels that domestic salary structure is unable to retain the high-level personnel. The Act regulated that payments of the Legal Persons shall not be more than ministerial levels, coupled with the long-term "populism" and "Long for fish by the waterside (臨淵驅魚)" mentality. There is not asked a substantive contribution and the international market compensation levels.

⁹⁹ 1111 人力銀行網路問卷調查，《上班族西進意願調查》，5月10日至5月24日，有效樣本數為1,173份。

Moreover, the companies are reluctant the reasonable salary of employment in the private sector that Korea, Singapore, China and Hong Kong are aggressive to headhunt with high-paying incentives for our high-tech and financial industry professionals to accelerate high-end "Brain Drain". For the long-term, it will seriously influence our competitiveness.

5.2.3.2 The "Brain Drain" of the academic and technology fields

The Taiwan human hunting companies commissioned by the Chinese enterprises a large amount of money to lure the high-level personnel away, targeting the technology and financial talents. The technology professionals are on behalf of the power that the Chinese technology industries will pay out of five times of monthly salary and not limited amount of the check to attract the Taiwanese talents. They even enlisted the budget of RMB 4.2 billion to lure the entire R&D team away of high-tech industries from Taiwan to transplant to China, such as: headhunting 200 of the former CMO panel talents to the China Hua-xing LED panel plant that causing the "Brain Drain" of the Taiwan LED/IC research and development. In addition to the technology industry, Taiwan academia¹⁰⁰ began to work out of Taiwan. Peking University even hired the professors of the National Taiwan University, National Chengchi University and other schools. The University of Hong Kong even paid five times of the salary in Taiwan and the annual salary is at least U.S. \$20 million, plus 50,000 dollars housing allowances a year that such a generous salary and research environment enhanced the Taiwan academic and technology professionals working in China.

¹⁰⁰ 中天人才孤島系列報導，《大陸五倍薪挖角 台灣高階人才大失血》。

5.2.3.3 Overseas scholars are unwilling to back to Taiwan¹⁰¹

Taiwan lack of resources of the country must be fabricated to create resources that talents are the most valuable intangible assets. It needs to have a strategy and far-sighted plan for head hunting of the international talents and cultivating the local elites. Taiwan's top two economic and academic institutions (National Taiwan University, Department of Economics and the Academia Sinica Institute of Economic Research) issued the world's top thirty graduates of the Department of Economics of the United States with four or five copies of the letter of appointment annually to the international competition for talents, but only one person reported for duty. The main reasons lie on there is gaps of the compensation level and research environment in Taiwan compared to the other countries. Asian countries are starting to increase the salaries of overseas scholars and the open the policies on professional and technical immigrants leading form the United States recent years. The starting salary of Singapore professor is more than forty percent than Taiwan in 1994 but has become more than three times now. The top talents wish with a group of the top supporting resources, world-class salary, and the advanced research facilities. The issues presented that students could not enter the top of Department of Economics in the United States broken the horizontal linkages(橫向聯繫)¹⁰² and postgraduates do not want to come back broken the vertical linkages(縱向聯繫)¹⁰³

¹⁰¹ 天下雜誌,《年輕經濟學家不回家》,2008年8月27日。

¹⁰² Horizontal linkage(橫向聯繫) means the talent level of contact. When we reduce the willingness study abroad, it will decrease in the number of candidates of postgraduates studying in the top universities abroad, associated the adverse effects of the international personnel training in Taiwan.

¹⁰³ Vertical linkages(縱向聯繫) mean that our talents studying in the foreign countries are unwilling to return to our country for contribution, not only cannot bring back to the advanced technology and concepts, but cannot create through its local connections in the academic potential of science and technology with the fame that are lacking their referral and string to exchange the ideas. Those factors will cause our international network without linking.

now, which is the reason of the academic Brain Drain in Taiwan. When the talents are seriously loss, Taiwan will be the world isolated finally.

5.2.3.4 *The professors shall take the enrollment task*¹⁰⁴

The budgets of the higher education are more than the average of OECD countries (Table-12 A percentage of the national education expenses in the GDP in 2011) that more than NT \$250 billion in higher education of the government investment. Those shall let the schools have enough funding for education annually and the teachers can focus on teaching and researching. However, the schools have to face of the increase in the number of colleges and universities, the decline in the quality of teaching and the impact of declining birthrate, coupled to adopt the system of evaluation of higher education, especially the number of SCI, SSCI, and TSSCI papers published as an important indicator of the universities grant. Those situations are resulting in the students complaining, professor feeling struggle and the enterprises despising because the professor engaged in teaching and research must carry the admissions tasks at the same time in order to achieve the four teacher evaluation indicators of "researching, teaching, service and counseling" as the basis of upgrading and re-appointment. This common phenomenon exists in the private universities that often caused a well-known professor having the opportunity to the development of the National University or abroad by his relationships. In addition, the disparity treatment of the domestic and foreign professors enhanced the academia talents immigrate to overseas for further development.

¹⁰⁴ 天下雜誌,《六成六教授：我們不反對大學退場》, 2012年10月3日。

Table-12 A percentage of the national education expenses in the GDP in 2011

Year	OECD Average	USA	Canada	Korea	Taiwan	Japan	France	UK	Germany
2011	1.5	3.1	2.6	2.4	1.87	1.5	1.4	1.3	1.1

Source: MOE



Section 3 、 Talents Recruiting

According to the statistics of National Immigration Agency 2011¹⁰⁵, the numbers of registered "Alien Resident Certificate" in Taiwan are 466,206 people (Table-13 The Numbers of the Residences in Taiwan). The top five countries of total aliens occupied 91% are from Indonesia, Vietnam, the Philippines, Thailand and Malaysia. As to the aspect of labor force, there were 416,566 people, accounting for 89% of the 2011 residence of aliens in Taiwan. As to the occupational segregations of labor force, 389,864 people, accounting for 93% is blue-collar foreign workers and 26,702 members, accounting for 7% is white-collar workers, most of whom are the foreign language teachers (Table-14 The numbers of foreign professionals with the employment permit in Taiwan). In the Taiwan's talent pool, the quality and quantity of the grassroots talents are abundant, but the outflow of high level of talents in the high-tech, academia and industrial fields. However, the most inflow talents are actually blue-collar (Table-15 The number of Aliens Residence permit in Taiwan 2002-2011) that is not only to supplant our job opportunities, but reduce the salary levels and carve up the social resources those are more mutually exclusive with the recruitment of high-level white-collar immigration policy diameter. The policies of the mid-level and high-level talents recruiting will be stated as follows.

Table-13 The Numbers of the Residences in Taiwan

Rank	Nationality	2011	2010	2000	1990	1980
1	Indonesia	159,506	144,651	83,519	1,413	981
2	Vietnam	97,865	86,224	26,792	33	71
3	Philippine	79,450	72,453	93,636	806	675

¹⁰⁵ NIA.

4	Thailand	74,770	67,326	139,527	1,082	933
5	Malaysia	11,196	9,396	6,672	6,159	4,104
6	Japan	10,748	9,101	9,939	6,616	5,328
7	America	10,645	9,862	9,967	6,684	5,519
8	Korea	3,572	3,265	2,890	1,587	886
9	Canada	2,368	2,304	1,855	343	304
10	India	1,688	1,520	994	391	260
11	England	1,436	1,245	1,262	423	439
12	Others	12,962	11,455	11,136	3,103	2,802
	Total	466,206	418,802	388,189	28,640	22,302

Source: Source: NIA

Table-14 The number of foreign professionals with the employment permit in Taiwan

	2011	2012/09	Up/down
Total	26702	28007	↑
Occupational training bureau	25448	26730	↑
Science park	1020	1021	↑
Processing and exporting area	234	256	↑
Specialization technology	13732	14172	↑
Chinese, teacher of continuation class	5621	5500	↓
Artistic performing art of religion	2325	2943	↑
School teacher	2301	2342	↑
Undertaking executive of investment	1592	1796	↓
Athlete and coach	39	33	↓

Source: Wang Zhi-sheng, "Globalization talents Competition", page 7.

Table-15 The number of Aliens Residence permit in Taiwan 2002-2011

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
foreign workers	288,878	283,239	288,898	297,287	306,418	321,804	316,177	306,408	325,583	367,666
Business	4,987	4,034	4,207	3,878	3,197	3,752	3,474	3,665	3,782	4,467
Engineers	3,416	3,145	3,319	3,117	2,500	2,407	2,072	1,920	2,002	2,148
Teachers	5,976	5,958	6,831	6,630	6,185	6,009	5,655	6,106	5,923	6,748

Source: NIA

5.3.1 The aspect of the mid-level talented people

5.3.1.1 Foreign students

Many countries for the demand for talents are extending downward to foreign students. In the past, the salary of the foreign university graduates working in Taiwan shall not be less than \$47,971, but need have 2 years working experience under the government conditions that is not conducive to recruit the young foreign talents working in Taiwan. Thus, the government amend the laws for "No work experience, but the salary not be less than \$37,619" in June 2012 to attract the foreign talents. However, this policy only attracts to the population of the foreign students in Taiwan, but not truly for the foreign professionals. Moreover, the payment standards are very difficult to attract talents working in Taiwan compared with other multinationals excellent enterprises. Although the Government has actively proposed the various incentives to attract the foreign outstanding college graduates, the Taiwan foreign students and overseas Chinese students for education and employment in Taiwan, the effect seems to be limited in the past few years to study in Taiwan by the number of professional and technical immigrants and

education. (Table-16 The numbers of the overseas students studying in Taiwan 2006-2011)

Table-16 The numbers of the overseas students studying in Taiwan 2006-2011

Year	2006	2007	2008	2009	2010	2011
International students	24,511	27,738	30,067	34,285	37,177	40,843
The foreign students for officially pursuing a degree	3,935	5,259	6,258	7,764	8,801	10,059
Overseas Students	10,320	10,861	11,426	12,840	13,562	14,045
Foreign exchange students	1,121	1,441	1,732	2,069	2,259	2,259
Language schools	9,135	10,177	10,651	11,612	12,555	14,480
Other overseas students	1,977	2,412	2,998	4,757	7,599	14,620
The Chinese students for officially pursuing a degree	-	-	-	-	-	928
Trainees from China	448	823	1,321	2,888	5,316	11,227
Short-term learning and personal readings	1,245	1,146	1,258	1,307	1,604	1,604
Overseas Youths	284	443	419	562	679	861
Total	26,488	30,150	33,065	39,042	44,776	55,463

Source: MOE

5.3.1.2 Three limits and six noes for the Chinese students¹⁰⁶

After the lifting of martial law in 1987, the government opened up the policies of visiting the relatives, Taiwanese landing, sightseeing, mini three links that increased the speed of people communication on both sides. The two organizations from 1991 began the formal contact and consultation. The government took office the progressive completion of 18 agreements including the three direct links and ECFA after President Ma. As to the cross-strait educational exchanges, China has

¹⁰⁶ 楊淑涵 (2011), 《我國高等教育學生對招收大陸學生來臺就學政策之態度研究》。銘傳大學教育研究所碩士班。"Three restrictions and six No"(三限六不) refers to "limit school, limited amounts, limited subjects" and "no extra points, not accounted into Taiwanese students quota, no scholarship, no part-time job, no license and no staying in Taiwan for jobs."

set out the relevant provisions of the mainland schools to recruit students from Taiwan in 1985 and more than 300 schools now are available for Taiwanese students reading through a separate registration, examination and enrollment that the tuition fee is equivalent to the local students and established of a scholarship and working in China after graduation. According to the statistics of the Chinese Ministry of Education, it has recruited 15,141 Taiwanese students studying for the further studying until the end of 2007 with the growth.

To attract foreign students for higher education has become a national trend, coupled with the low birth rate under the influence of globalization that the market of Taiwan's higher education has been saturated. In order to maintain school operation and the development of the students, to promote Taiwan's democracy, to strengthen the cross-strait understanding and the implementation of the campaign platform, the 19th Legislative Yuan of 2010, by "Three laws of the Chinese students"¹⁰⁷ opened the Chinese students studying in Taiwan from July 2011. It has entered the second year this year under the populist driven that the number of recruiting the Chinese students is less than ideal (Table-17 The numbers of the Chinese students study in Taiwan). Moreover, the treatment of the Chinese students is unfriendly in life and laws that affecting the willingness to Taiwan (Table-18 The welfare comparisons of Chinese and foreign students in Taiwan).

Table-17 The numbers of the Chinese students study in Taiwan

Degree	Bachelor		Master		PhD	
Fields	Finance, economy, law, business management, Chinese literature, international business, information engineering, communication, Electrical Engineering and Electronics Engineering are Chinese students preferred subjects					
Recruiting school	132 schools of approved by the Ministry of Education (General, Technical and Vocational, excluding 5-year College)					
Enrollment data	2011	Recruiting students 1488 、 Registration 724	2011	Recruiting students 571 、 Registration 181	2011	Recruiting students 82 、 Registration 23

¹⁰⁷ "Three laws of the Chinese students(陸生三法) refers to the regulars of the relationship between the people on both sides, the University and College laws.

	2012	Recruiting students 1566 、 Registration 677	2012	Recruiting students 508 、 Registration 282	2012	Recruiting students 67 、 Registration 28
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Source: The University Joint Admission Committee of Chinese Students

Table-18 The welfare comparisons of Chinese and foreign students in Taiwan

	Chinese students	Overseas students /Foreigners
Quota of people	1%	10%
Subjects	○	X
Extra points	X	○
Scholarships	X	○
Part-time jobs	X	○
Healthy insurance	X	○

Source: Organized by myself

5.3.2 The aspect of the high-level talented people

5.3.2.1 The flexible payment system¹⁰⁸ without efficiency

In order to attract the talents joining the academia, research and teaching fields, the Ministry of Education implemented the flexible payment system in 12 schools including the NTU, National Cheng-Kung University, National Tsing-Hua University, National Chiao-Tung University, National Cheng-Chi University in 2010 and 2011. The total applicable number is 2524 and 3113 people respectively, in which are serving 2498 and 2955 teachers raising their payment , new recruiting talents are only 26 and 158 people, the foreign teachers accounted for only 16 and

¹⁰⁸ 聯合報,《立委：濫用「彈薪」教授變相加薪》，2012年10月21日。The flexible payment system(彈薪方案) means the measures that open schools to recruit the special talents may apply to the National Science Council at any time. The National Science Council will invest NT 200 million a year after passing a review. Excepting the teacher salaries, the Assistant Professor level can obtain subsidy of NT \$ 300,000 annually. The Associate Professor level can obtain subsidy of 60 million and the Professor level can obtain subsidy up to 90 million, grants of up to three years.

53. The ratio of the flexible salary subsidies for serving teachers is as high as 98% and 94% and for the newly recruited talents is only 1% and 5%. In the twelve schools, National Taiwan Normal University and National Cheng-Kung University did not recruit any new teacher in two years, while the Central University, National Chung-Hsing University, The Yang-Ming University, NTUST and Chang-Gung University did not recruit new teachers one of each year.

The flexible payment system was intended to supply the schools with the flexible compensation standards to attract the foreign outstanding scholars working in Taiwan. However, it became actually in disguise for serving teachers for raising their payments, which is inconsistent with the talents purpose of recruiting foreign scholars and retain the local talents. This scheme is currently failure running. The Ministry of Education should do the audit work to the grant schools, rather than a waste of educational funds in raising their own salary. After seizing, it should be adopted to cut the education subsidies and give the warning and punishment that could truly achieve the purpose of recruiting the foreign scholars and retain the domestic talent.

5.3.2.2 Talent courtesy¹⁰⁹ effect is limited

The face of the challenges of the "Brain Drain" and "The world view of Taiwan incentives to recruit international talent", the government reduced the immigrating restrictions of the international professionals to actively attract the foreign talents stay and work in Taiwan and create the friendly environment for the foreigners. Moreover, the government in the program of attracting the foreign talents worldwide to Taiwan promoted the issuance of "Academic and Business Travel

¹⁰⁹ NIA.

Card", "Employment PASS" and "Permanent Residence Card (Plum Card)" from January 2009¹¹⁰ (Table-19 The courtesy comparisons of the three cards) to create a friendly international environment. However, it still needs more efforts due to meeting the qualifications and the limited number of courtesy.

Table-19 The courtesy comparisons of the three cards

Types	"Academic and Business Travel Card"	"Employment PASS"	"Permanent Residence Card (Plum Card) "
Contents	"Academic and Business Travel Card" issues to the international famous people, given the long-term period, multiple-entry and customs clearance courtesy residence during the 30 days without further work permit application by the Council of Labor Affairs to improve the international famous people willingness working and interflowing in Taiwan.	The general foreign white-collar professionals working in Taiwan, issued by the "Employment PASS" combined with visas, work permits, re-entry permit and residence permit. "Four cards in one", and coordinated set of cross-ministry "single window" that greatly simplifies the foreigners come to Taiwan to the bid for the job, and helpful in the establishment of the foreigner-friendly environment, and improve our international image.	Our immigration policy for the foreign white-collar workers applying for the investment or technological immigrants, issued the "Permanent Residence Card "(Plum card) to simplify the bid for the job, in order to attract the foreign white-collar immigrants and investments.
Performances	There was an international famous people issued this courtesy for inflowing and instruction since 2009.	The two high-level talents of Sweden and Germany issued by this simple administrative measure that helped to improve our technical level.	It has been issued a U.S. citizenship high-level professional, setting up a company in Taiwan and the total share capital of NT \$ 465 million and creating the 218 job opportunities.

Source: CEPA

¹¹⁰ Council of Economic Planning and development (CEPA).

Chapter 6 、 The reasons of Brain Drain and the response strategies

Section 1 、 The reasons of Taiwan's Brain Drain

Thomas Friedman, the United States author, stated in New York Times Column¹¹¹ on May 2012 that the performance of Taiwanese talent is impressive despite its lack of natural resources. However, the Deputy Prime Minister of Singapore had some negative comments to Taiwan that reminded Taiwan facing the problem of Brain Drain. The government must pay more attention to attract outstanding international personnel.

The foreign professionals in Taiwan in the past five years have dropped the numbers from 29,000 people to 26,000 people, including the professional and technical personnel declined from 17,000 to 13,000 people. The number of professional and technical investment migrants decreased significantly that is a serious warning. This data represented that the Taiwanese business environment has a serious problem while facing of the global rise of regional economic organizations as the cooperative mode, such as NAFTA, EU, ASEAN, TPP, the APEC, TIFA, ECAP, CJKFTA, etc. Taiwan, the economic and trading country, will be marginalized and speed up the Brain Drain in the face of the countries allied with the talent exchange.

Taiwan is currently at the occasion of the adjustment of the industrial structure and people-oriented industry. In domestic, we not only continue to optimize the quality of human resources, but need more international experience to draw on the external talent to enhance Taiwan's international competitiveness. However, in the face of higher education development

¹¹¹ 卓越雜誌，《檢視我國人才流失問題》，2012年6月，頁16。

imbalances and foreign oncoming torrents recruiting, those are not only causing a shortage of talents, but also a Brain Drain. The comprehensive whole-related causes of a talent exodus are as follows.

6.1.1 Development of higher education imbalance

The traditional industries flourished in the 1980s due to the success of the operation of the vocational education system that creates the SMEs formation as the master key to the national economic development. A numbers of universities are set up to enhance the quality of human resources in the 1990s and the school upgrading became the main trend in which most technical and vocational institutions were transformed into science and technology universities or technical colleges. The education systems pay too much emphasis on examinations and ignore the importance of hands-on operation and experience, leading to high homogeneity in universities at the expense of diversity. Thus, these talents are unable to respond to national development needs that are not only a waste of limited resources, but also worsen unemployment problems.

6.1.2 Acts and Policies unrepentant¹¹²

"Creativity" is formed through the absorption of external knowledge and brainstorming. Taiwan is a country somehow unfriendly to immigrants due to domestic unemployment concern. The Acts and Policies related to training, maintaining and recruiting are rigid resulting in foreign talents unable to immigrate and at the same time local talent moved out or encountered mis-match situations. Thus, it caused the crisis of talents imbalance.

As to the employment norms, the Government amended the law regarding

¹¹² 翁啟惠，中央研究院，《人才宣言》，2011年。

employment conditions and enterprises employing foreigners who have "no experience but the salary offered is not less than \$37,619" in 2012. This amendment intended to convince the enterprises to increase the employment opportunities for foreigners studying in Taiwan. However, will this policy be able to attract foreign professional talents willing to work in Taiwan is still something to be closely monitored? This is just to help foreigners seeking employment opportunities in Taiwan, not the talents but the human resources. The other policies such as the related supports to facilitate foreigners staying in Taiwan are not modified, coupled with domestic investment environment not better than the neighboring countries. The unpredictable prospect of Taiwan's economic development and employment opportunities make many overseas students to choose other countries whose employment environment is better with good salary, strong research team and more opportunities for self-realization. The low payments and inflexible statutory policy are still main causes of talent loss leading to waste of resources spent in cultivating as well as recruiting talents.

Retirement policy is another barrier to retaining and recruiting talents. Taiwan adopted the system of single nationality such that foreigners shall give up their own nationalities before naturalization. The majority of foreigners do not want to forgo their own citizenship in order to obtain ours. Foreigners who have not yet naturalized cannot enjoy the social welfare resources and are not able to have the monthly retirement pension after retirement from the universities and research institutions. That means they are deprived of protection for their retirement life. Thus, most of the foreign scholars declined to come to Taiwan or working for short-term because this system is unfavorable to international talent recruiting.

6.1.3 Industrial restructuring being slow

In the past, Taiwan's industry policy focus mainly on high-tech industries. After China's reform and opening up in 1987, China offered Taiwan's SMEs including the manufacturing, electronic, and OEM industries three-year tax-free, rent-free, cheap labor among others to attract a large number of businessmen setting up factories. With the economic upgrading of China, living standards improved and the implementation of the Labor Contract Law, the Chinese government required the Taiwanese enterprises to upgrade equipment and production. The Chinese Communists asked the business to restructure and upgrade. As a result, rising wages and operating costs suppress the profit margin. Thus, the small-scaled Taiwanese enterprises had to turn to Vietnam, Cambodia and other countries with the cheap labor. In Taiwan, the enterprises are restructured slowly, resulting in the loss of market opportunities, the revenue reduced and the low salary levels. Moreover, the situations of the no pay leave and layoffs are occurred frequently. The companies do not want to nurture talents. This long-term vicious cycle caused the continued economic downturn that are unwavering to the talent recruitment and accelerate the "Brain Drain".

6.1.4 Salary structure caused the adverse recruiting¹¹³

When Singapore, Korea, Hong Kong and China took the talent competition as a war and significantly modified the national laws and policies, Taiwan repeatedly considered the highly paid talents as an injustice symbol that is harmful to the talent recruitment. Moreover, the government is lack of talent hiring flexibility given the rigid promotion system. Take the salary structure of teaching and research as an example, the civil service system forces everyone to be equal so that the compensation level (Table-20

¹¹³ 中國評論網，〈朱敬一：台灣正面臨科研人才斷層危機〉，2010年1月25日。

The salary comparisons of the professors in the Asian countries) is difficult to retain the high-level talents. The Asian countries offer high salaries to lure talents and research teams of the high-tech and financial industries away. These factors do not only accelerate the domestic high-end "Brain Drain", but also will seriously affect the long-term competitiveness of the country.

Table-20 The salary comparisons of the professors in the Asian countries

Country	Taiwan	Hong Kong	Singapore	China
Contents	Postdoctoral research assistant of the Academia Sinica's Institute	Professor	Professor	Professor
Annual salary/Compensation	USD \$ 70,000	US\$ 200,000, in addition to one-year \$ 50,000 housing allowance and 15% of the salary into the pension	US\$ 200,000	RMB 436,000 "320,000 annual salary, payment for 100,000, subsidized housing 250,000 (3years), one way ticket, school hostel subsidies"

Source: China Review Net, " Zhu Jing-yi: Taiwan is facing the faults crisis of scientific research personnel's", January 25, 2010.

6.1.5 The tax shortage¹¹⁴ is not conducive to the talent competition

In order to foster the industrial development, the tax was cut to boost the private investment in the past that introduced the Investment Incentive Ordinance (1960-1990) and the Statute for Upgrading Industries (1991-2009), Industrial Innovation Act (2010) to provide the domestic enterprises the tax concessions. In Asia, the Taiwan's business income tax was reduced from 25% (2007) to 17% (2010)¹¹⁵, which is lower than that of China (33%), Korea (27.4%), Singapore (20%), Hong Kong (17.5%). Moreover, the

¹¹⁴ 楊志良，台灣大崩壞（台北：天下文化），2012年4月27日第一版，頁85-86。

¹¹⁵ www.nat.gov.tw/investtaiwan

business effective tax rate is only 10% after deduction of annual 120 billion business tax concessions, which is even much lower than other countries.

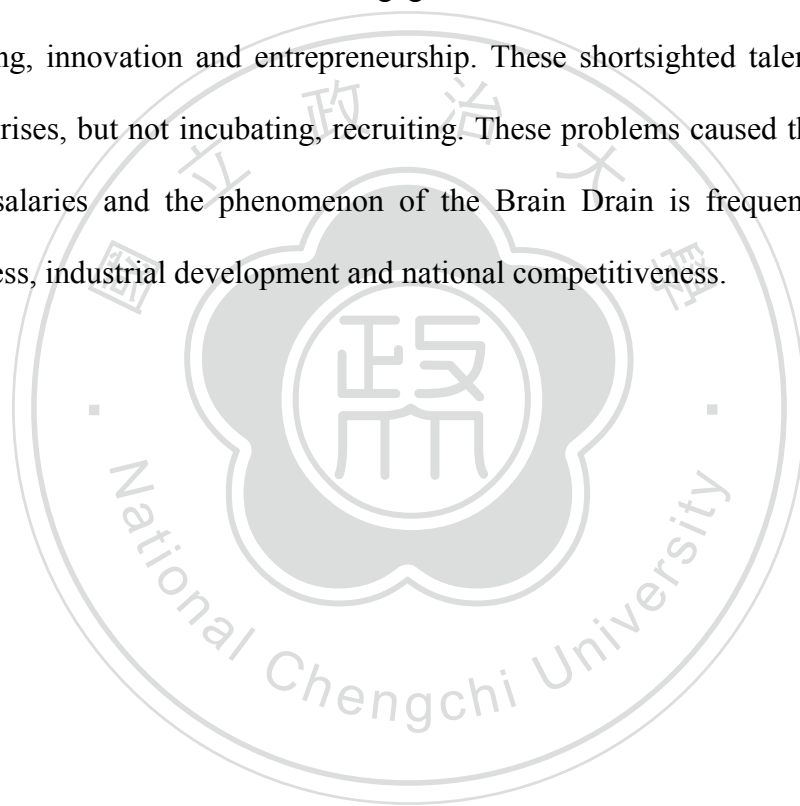
In the past, the government promoted export-oriented development model during 1960-1980's in which foreign exchange control and tax cut were adopted to assist capitalists rapid accumulation of wealth through reinvestment and to create more job opportunities. This strategy did make the Taiwan's industries prosper. The average economic growth rate was 8% in 1991. From 1980 to 1990, the implementation of the ordinance by expanding the business tax concession to promote the industry lowered the economic growth rate to 5-6% in 1998. Afterward, the policy of the imputation tax concession contributed the economic growth rate swapping to 4% and even appeared -2.17% in 2001. A series of tax concessions did not help the economy much, but result in the national construction constricted and stretched. As the world economy was downturn, the enterprises took the pay freeze, layoffs and unpaid leave to save the cost. The government reduced public expenditures, but increased the investment. Moreover, the government was short of effective talent policies to consolidate the existing talents to avoid a vicious cycle when all countries are luring them away by various incentives. Thus, challenges of Brain Drain and loss of competitiveness in the future shall be a serious national concern.

6.1.6 The shareholder¹¹⁶ dividends limited the development of talent

Taiwan's high-tech industry would like to retain the talents through the system of paying the stock bonus to the employee so that employees do not have to purchase the stock to become shareholders of the company. It was a common practice to retain

¹¹⁶ 蔡文達 (2003), 《員工分紅入股制度對高科技產業發展之影響》。國立雲林科技大學企業管理系碩士班。

so-called "Hi-tech Elite" in high-tech information industries of TSMC, Foxconn, Media-Tek. The enterprises template the fresh graduated talents from top science and engineering with high salary, and then retained them with the stock bonus that reduced them the willing to study abroad for their further studying, which is detrimental to the development of Taiwan's high-tech industry. When the top engineers is paid the temptation who do not want to engage in the basic scientific research, study abroad, learning, innovation and entrepreneurship. These shortsighted talents are used by the enterprises, but not incubating, recruiting. These problems caused the recruiting by the high salaries and the phenomenon of the Brain Drain is frequent, that damage the business, industrial development and national competitiveness.



Section 2 、 The strategies of the government

Low birth rate and aging are challenges of advanced countries. Most of those countries tried hard to come up with national strategies to deal with. The fact of the "Brain Drain" and "shortage of talent" will lead to national competitiveness negatively affected amid globalization and the WTO market opening trend and talents recruitment efforts by countries such as the U.S., Japan, Korea, Singapore, China and etc. The stagnant growth of the population¹¹⁷ will negatively affect economic growth, the labor shortage and aging problem. The labor force of younger generation is needed in high-tech industries, information industries, the communications industries, E-commerce, cultural and creative industries, retail as well as entertainment industries, leisure and healthcare industries. If the population outflows are not to be improved, it will lead to high-level labor under-supply, recession and severe problems for the Taiwanese industries, which in turn lead to the decline of government revenue, the decrease of citizen savings and the weakening of country competitiveness.

"Human resources" could be divided into the "manual" type and "mental" type. The shortage of manual/physical labor can be solved by the introduction of foreign workers, but the brain drain is more difficult to solve. In order to solve the problems of the "talent shortage", the CEPD launched the personnel training programs and coordinated the ministries policies to enhance the manpower that government and industries need both quantitatively and qualitatively. The government hopes to make Taiwan as talents hub centers in the Asia-Pacific area. The responsive strategies to address talent plight include shortening the gap between learning and training, the program of economic momentum upgrading and the golden ten years are as follows.

¹¹⁷ 楊志良，《台灣大崩壞（台北：天下文化）》，2012年4月27日第一版，頁51-52。

6.2.1 The program for shorten the gap between learning and training¹¹⁸

6.2.1.1 To promote the employability of the students

It is focus on strengthening school education for industry needs, university-industry cooperation mechanism to keep the tide interactions between industry-academia and shorten the gap between learning and practicing.

6.2.1.1.1 With the dynamic of the industrial practice, flexible adjustment of the department programs

- 6.2.1.1.1.1 The grants to the colleges of the interdisciplinary degree and credits program (MOE).
- 6.2.1.1.1.2 To conduct the colleges adjusting the departments (MOE).
- 6.2.1.1.1.3 The practice courses of the R&D and the industrial technical fields (MOE).
- 6.2.1.1.1.4 The improvement of the vehicles practice courses of the technical colleges (MOE).
- 6.2.1.1.1.5 The practical monograph and campus entrepreneurship competitions for the technical and vocational students (MOE).
- 6.2.1.1.1.6 To encourage the technical colleges offering the integrated career courses to help students the job inauguration (MOE).

6.2.1.1.2 To encourage teachers practical learning and strengthening the practice teaching

- 6.2.1.1.2.1 To promote the teachers of the technical colleges learning and practicing in the public and private institutions (MOE).
- 6.2.1.1.2.2 To expand recruiting the instructors with the industrial experience (MOE).

6.2.1.1.3 To expand the internships and the industry-university collaboration

- 6.2.1.1.3.1 The personnel training special classes of the university-industry cooperation (MOE).
- 6.2.1.1.3.2 To promote the technical colleges opening internship courses out of the campus (MOE).

¹¹⁸ 行政院 101 年 7 月 4 日院臺經字第 1010031641 號函核定。

- 6.2.1.1.3.3 To promote the cooperation of the universities and enterprises to foster the International R & D Elite Program (MOE).
- 6.2.1.1.3.4 To provide the youth vocational training courses (the Council of Labor Affairs, CLA).
- 6.2.1.1.3.5 To increase the workplace competitiveness of the college students and linkage with workplace standards (CLA).
- 6.2.1.1.3.6 To promote students having the part-time work in the community during the summer vocation creating the career development concepts (Youth Commission).
- 6.2.1.1.3.7 To assist students in understanding the properties of public sector services to enhance vocational aptitude exploratory opportunities (The Youth Commission, YC).
- 6.2.1.1.3.8 To establish and convene the school mechanism to enhance the youth employment force (YC).
- 6.2.1.1.3.9 To promote the technical colleges and private universities to operate industry-academia module or internship project courses (NSC).
- 6.2.1.1.3.10 To strengthen the use of industry-university resources (The Ministry of Economic Affairs, MOEA).
- 6.2.1.1.3.11 To provide learning opportunities and experiences of students' practical operation through the Contest of the Cities Marketing Exhibition (MOEA).
- 6.2.1.1.3.12 To increase the competitiveness of the financial workplace for the college students in order to link with the workplace (FSC).
- 6.2.1.1.3.13 Training the pop talents (The News Bureau).
- 6.2.1.1.3.14 Training the talents of the public channel program production (The News Bureau).
- 6.2.1.1.3.15 To encourage the students of the Department of film in the practice learning (News Bureau).
- 6.2.1.1.3.16 To encourage the students of the construction-related department of wisdom green building interdisciplinary learning how (Ministry of the Interior).
- 6.2.1.1.3.17 To encourage the domestic public and private universities graduated students engaged in the research and development work of the energy and

radiation applications (The Atomic Energy Commission).

6.2.1.2 To enhance the matching platform

It focuses on assisting the employment linking for the second expertise degree programs or on-the-job training to enhance the conditions of youth employment after graduation and shorten the adaptation period during the employment.

6.2.1.2.1 To encourage the students the vocational expertise internship and training to closely align with the industries after graduation

- 6.2.1.2.1.1 To handle the youth vocational training measures after leaving the schools (CLA).
- 6.2.1.2.1.2 To continuously promote the college and university graduates of internship (YC).
- 6.2.1.2.1.3 To promote the program of the second expertise bachelor's degree (MOE).

6.2.1.2.2 To foster the professional expertise's upgraded in response to the different industry professionals

- 6.2.1.2.2.1 To strengthen the professional and technical capacities of the science park employees (NSC).
- 6.2.1.2.2.2 Training of the international business talents (The Economic Affairs, EA).
- 6.2.1.2.2.3 The sufficient industry professionals (EA).
- 6.2.1.2.2.4 To develop the high-level innovative talents (EA).
- 6.2.1.2.2.5 To enhance the financial talents the professional abilities (FSC).
- 6.2.1.2.2.6 To strengthen the film industry professional personnel training (The News Bureau).
- 6.2.1.2.2.7 Training the TV professionals (News Bureau).
- 6.2.1.2.2.8 Training the cable employing digital knowledge (News Bureau).
- 6.2.1.2.2.9 Training of the pop music talents (News Bureau).
- 6.2.1.2.2.10 The social worker job training mechanisms (The Ministry of Interior).
- 6.2.1.2.2.11 The wisdom of green building design and planning professional work force training (Ministry of the Interior)

- 6.2.1.2.2.12 Long-term care professional manpower training (Department of Health).
- 6.2.1.2.2.13 To promote the tourist industry and academia excellent elites sophisticated expertise's (Ministry of Transportation, MOT).
- 6.2.1.2.2.14 To strengthen the serving crew the professional training (MOT).
- 6.2.1.2.2.15 To cultivate the agriculture talents (The Council of Agriculture, Executive Yuan).
- 6.2.1.2.2.16 Aboriginal traditional art, the life wisdom and cultural heritage and creative R&D (The Indigenous Peoples Council).

6.2.1.2.3 To strengthen the multiple employment-oriented trainings to open up the employment pipelines

- 6.2.1.2.3.1 In-service education training (CLA).
- 6.2.1.2.3.2 The unemployed pre-training (CLA).
- 6.2.1.2.3.3 To assist the senior citizens employment (CLA)
- 6.2.1.2.3.4 To assist Veterans employment (Veterans Affairs).
- 6.2.1.2.3.5 To consult the Hakka Youth venturing, comprehensive training the various areas of industrial production and sales talents (The Council for Hakka Affairs).
- 6.2.1.2.3.6 To establish a lifelong learning society, planning the multiple courses (MOE).

6.2.1.3 Continual improving the quality of labor force

6.2.1.3.1 To strengthen its functions of the internship platform and properly guidelines for the workplace needs

- 6.2.1.3.1.1 To provide the platform of the universities or colleges in the job functions (MOE).
- 6.2.1.3.1.2 To provide the matching platform of the internship opportunities (MOE).
- 6.2.1.3.1.3 To provide the students opportunities of the multi-platform of the workplace (YC).

6.2.1.3.2 To provide the functions of match filtering to promote the employment opportunities.

- 6.2.1.3.2.1 To assist the employers to recruit the required manpower (CLA).
- 6.2.1.3.2.2 To provide the VTC information platform (CLA).
- 6.2.1.3.2.3 To promote the cultural and creative industries and Information Service Platform (The Council for Cultural Affairs).

6.2.1.4 To strengthen the linking of the local personnel's with international standards

6.2.1.4.1 To upgrade the foreign language capabilities, integrated with international environment

- 6.2.1.4.1.1 To strengthen the ability of foreign language and overseas internship experience (MOE).
- 6.2.1.4.1.2 To establish the technical colleges overseas internship programs (MOE).
- 6.2.1.4.1.3 English curriculums for the Exhibition (MOEA).

6.2.1.4.2 The introduction of the certification exam of the International Conference and Exhibition to strengthen the international standards (The Economic Affairs).

6.2.2 The program of economic momentum upgrading¹¹⁹

- 6.2.2.1 The combination of the industrial demands, improvement of technical and vocational education.*
- 6.2.2.2 The development of human value-added industries and strengthening the convergence of the industry-university internships.*
- 6.2.2.3 To promote the talent layout and to train the new industrial talents.*
- 6.2.2.4 The timely adjustment of labor regulations in response to the industrial and social trends.*

6.2.3 The Golden Ten Years¹²⁰

6.2.3.1 The innovation of the science and technology

¹¹⁹ The Council for Economic and Planning.

¹²⁰ The Executive Yuan.

6.2.3.1.1 The transition innovation-oriented economic system.

6.2.3.1.2 Deepening the basis technological research and development.

6.2.3.1.3 The governance mechanism of the innovative science and technological decision-making.

6.2.3.1.4 Enhancing the effectiveness of scientific research value.

6.2.3.1.5 To construct the friendly environment for entrepreneurship.

6.2.3.1.6 Building the environment of giving the full scopes to the talents.

6.2.3.2 Promoting the employment

6.2.3.2.1 To promote the civil investments and develop the job opportunities.

6.2.3.2.2 To review the basic wage regularly in the implement the reasonable salaries.

6.2.3.2.3 To strengthen the industry-university cooperation, nurturing the talents of the knowledge economy.

6.2.3.2.4 Strengthening the human capital investment to enhance the employability and employment rate.

6.2.3.2.5 To create the friendly workplace for both family and work to promote the employment of women.

6.2.3.2.6 To shorten the statutory working hours, review the system of labor leave, and promote the two-day weekend.

6.2.3.3 The education innovation

6.2.3.3.1 Improve the capability of Chinese English.

6.2.3.3.2 The promoting the Chinese language education globally.

6.2.3.3.3 The 12-year basic education for the people.

6.2.3.3.4 Raising the level of university education and the promotion of educational internationalization.

6.2.3.3.5 The nurturing the economic needs of the knowledge-oriented talents and the implementation of value-added knowledge.

In the aspect of the "Incubating talents", the higher education in Taiwan produced sufficiently high-quality talents and the grass-roots human resources, but they are not accepted by the enterprises. While those quality-poor schools have not yet been eliminated, numerous 5-year colleges were approved to be upgraded into the Universities of Science and Technology. Moreover, there is lack of the training and sustaining mechanism for the medal-winning students in the international science fairs. In addition, while humanity-oriented graduates were oversupplied in the market, the authority still repeatedly approves their enrollments without considering the needs of the business. Those are the paradoxical phenomenon of the higher education.

In the aspect of "Maintaining talents", academic reviewing mechanism pushed professors to not only focus on teaching but also publish paper preferably in English. Worse still is professors are required to be responsible for schools' enrollment in most of private schools. As a result, professors face low salaries, high pressure and no visions in the future, which depress current talents and push them away from working in Taiwan. The government should not repeatedly adopted short-term solutions to the unemployment problem such as "22K", "57K" or "1000K" that turned out to be exploitation of talents by enterprises on one hand, and push talents to pursue government jobs on the other hand. The government should strengthen the coordination of the public sectors with the enterprises horizontally, and implement all the efficient policies, and strongly encourage the enterprises to raise the salaries of employees gradually, which combined can actualize the effect of maintaining talents.

In the aspect of the "Recruiting talents", the Government has implemented the "Flexible salary scheme", but it turns out to raise domestic professors' salary, which seems to be contrary to the original purpose. Moreover, the comparatively low salary levels, restrictive laws, regulations, immigration policy, worse working conditions, and social welfare,

compared to those of neighboring countries or regions such as Singapore, China, Hong Kong make Taiwan lack of incentives to attract foreign investments. The government and industries have difficulties to attract the foreign professionals or overseas Chinese talents, which is the big issue for the government.



Chapter 7 、 The Conclusions and Recommendations

In 1959, Bogue stated "The population of push-pull theory" suggesting that the economic development will result in population movements. The flow of talents has become the norm in the international community. The very fact causes "Brain Drain" challenge. Moreover, because the advanced European countries suffered from European debt crisis, European domestic talents migrated to Asian countries. Therefore, the "Brain Drain" phenomenon made those countries very cautious of this wave of talent mobility and tried to retain talent and recruited foreign talent. Taiwan is no exception to this challenge. Facing the "Brain Drain" problem, the government began as early as 2000 to take some measures of containment and revitalization in the "incubation", "maintaining" and "recruiting" at work, especially in upgrading the level of research, innovation and technology to accelerate the industrial restructuring. The population policy of 2006 stated that the new human resources are made available to meet the needs of development of science and technology. However, Taiwan is still facing a greater Brain Drain challenge so that the effectiveness of the human resource policy is actually limited.

When other countries use high salary to lure the talents away, the government is simply left with no chips to retain or recruit talents. The only way out is to elevate the national soft power and hard power that might slightly curb the "Brain Drain" and recruit the talented people. The conclusion and recommendations are as follows.

Section 1 · Conclusion

From the point of view of the the OECD proposed "knowledge economy", the human resource includes two types, one is ordinary manpower and the other professional manpower. According to the neo-classical economic theory, talents will move to high-income areas and it is natural that wage differentials hasten this flow. When Singapore and Hong Kong continued to recruit actively the high-level personnel to meet the needs of the academic, financial as well as technology fields and enjoy economic flourishing, Taiwan is still in the middle of economic stagnation, which made talent recruitment difficult. Thus, the positive competition was caused by the economic growth rate of convergence ".

Regarding the introduction of foreign workers in Taiwan, The Southern Asian countries can activate their economic development by exporting their human resources which in turn benefit Taiwan's economy. But if the exports are talents, skills, knowledge, professional expertise and creativity, it will widen the gap between the rich and the poor. It's wise for the government to view the "Brain Drain" phenomenon with positive and optimistic attitudes, particularly when the government and enterprises are not able to offer the reasonable salary and environment. They can inject new inputs to their home countries and home enterprises with newly learned skills and knowledge in other countries, upon returning to their mother countries. The Government and enterprises should pay more attention to the high-end talent because they can play a key role in various fields. In Taiwan, many professors, senior engineers, pilots, and financial advisors are attracted by the generous offer in Singapore, Hong Kong and China. In this aspect, the government and enterprises should provide an excellent environment to recruit and keep talents.

"Brain Circulation" is a common phenomenon. The flow of talent is tracking from the

backward area to advanced areas, from the rural to the urban and from the inner areas to the coastal places. The brain circulation is a symbol of the strength of the national competitiveness. Countries that have competitiveness in general could attract talents or take initiatives to recruit while those without competitiveness lack incentives for talents to come. Thus, the Brain Circulation was called the Brain Drain for the countries of exporting talents while importing countries are the winner in this talents competition games..

The process of cultivating the talents was arduous. Li Kuo-ting, Sun Yun-suan etc. had the visions and tried to break through national policies in response to the situation of the industrial transformation to seize the opportunity to catch up with the development of the world economy. The contribution of those talents to the economy was enormous and they lay the foundation for Taiwan's talent pool and opened up Taiwan's economic golden age for more than two decades. Since 1992, many Taiwan businessmen moved their factories to China taking away the enterprise funds and key technologies leaving only empty plants and debt in Taiwan. In order to compensate for the manpower gap after the Taiwan businessmen move westward away, the government in 1991 introduced a large number of foreign workers into Taiwan especially for 3D industries who not only depressed salaries of the local labors, but also deprived of the job opportunities. In addition, a number of universities were set up due to the policies in the beginning of the 1990s, resulting in the decline of the vocational education system and the shortage of the basic technicians. In addition, the overseas students do not want to return to Taiwan to contribute their professional expertise so that talent crisis issue began to emerge in the recent years.

Although the upgrading of higher education represents the raising of the quality of the people and their lives, it does not mean that job opportunities and wages will be increased as well. When the higher education is devalued, it is likely to increase the unemployment rate of

college graduates. The current economic challenges in Taiwan are: enterprises are hesitant to return to Taiwan, slow transformation of the Taiwan's industries, the stagnant of the economic development partially as a result of vicious antagonism among political parties. In addition, negative emotions are prevalent among this society such as rising of commodity prices, injustice of housing policy, the deprivation of the younger generations, corporate layoffs, unpaid leave and so on. The government would like to increase spending on the public constructions to expand the employment opportunities but lacks resources. As a result, people suffer and talents outflow.

In the past, the Taiwanese industries moved to China with the mid-level cadres and management personnel. After the transition and transformation of Mainland China's industrial structure and its fast economic development, the Chinese government has demanded that Taiwanese-owned factories need to transform under the policy of "Cage for birds" toward the green energy industries. Taiwanese businessmen had to return home country or relocated to Vietnam, Cambodia and other low human capital countries. The transformation from "human power" to "talents power" will move China toward a country with high-quality manpower and innovation power. The high-level talents are the most important factor, so the Chinese government tries its best to lure them to come to China. Therefore, Taiwanese talents were priority target as they share similar cultures. The turn away of the senior and core talents of the high-tech industries and academia fields did leave great harm to the country.

As to the "Brain Drain", it is due to the willingness of the foreign companies who offer high salary and other incentives. In addition, Taiwan's laws hold companies liable to obey competition prohibition clause too light a legal obligation that failed to act as a deterrent, so that it is not rare to see high-tech team and their technology to fall to its competitor's hand. The "vicious headhunt" is inevitable under the competitive market. However, the government

can strengthen the criminal liability by amending the law to curb the worsening situation in order to avoid the threat of the national strength.

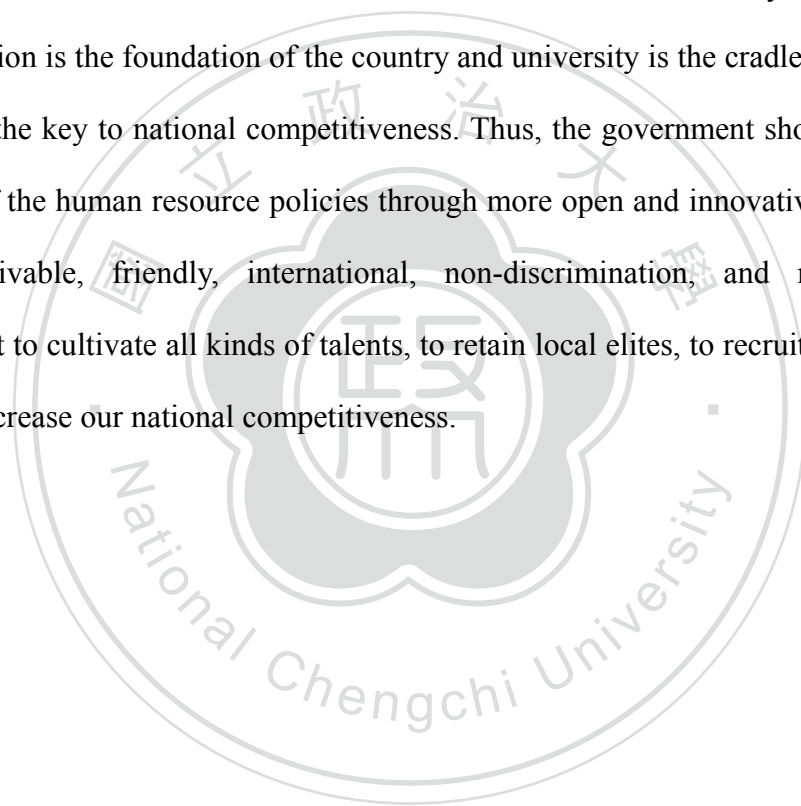
In addition to the high-level Brain Drain, the quantity and quality of mid-level talents in Taiwan are sufficient. The government needs to use these people to address the issues. When the younger generation and college-educated young people cannot find jobs and took to the streets, the government shall know that it is far more serious than the "Brain Drain". Spain and Greece were particularly serious in respect of unemployment problem amid the European debt crisis. The local youth unemployment rate was as high as 50% in March 2012¹²¹, compared to 12.22% in Taiwan in the same period. However, Taiwan's youth unemployment rate was still much higher than the overall unemployment rate of 4.17%. The government must pay attention to the payments backward trend and the unemployment rate to avoid the instability of the regime. Moreover, the government must make balance between business and salary structure. If the government is protective of employers at the expense of employees, it will have serious impact on national stability. In addition, as to the rising of the global regional economic organizations cooperation, such as NAFTA, EU, ASEAN, TPP, APEC, TIFA, ECAP, CJKFTA, the government should actively negotiate to join the various economic organizations to open up the Taiwanese market and to better economic opportunities.

While Hong Kong, Singapore, Korea and China actively grab the world's talents, Taiwan will inevitably encounter the harsh challenge of "Brain Drain". The government should noticed that the high-level talents are only a very small minority in the population pyramid and the foundation of the country's development still need to rely on the majority of

¹²¹ 大紀元，〈金融海嘯後 青年失業率趨高〉，2012年8月12日。

grass-root talents. Thus, the above-mentioned countries only have their eyes on those top talents and ignore the grass-root people's feelings. If they failed to deal with the allocation of resources properly, the regime maintenance and social stability would be jeopardized. The government should require the enterprises to reduce the number of foreign labors, to increase local employment, to improve salary and to strengthen the business transformation that all-together could result in an environment favorable to the talents to stay in Taiwan.

Education is the foundation of the country and university is the cradle of cultivating local talents and the key to national competitiveness. Thus, the government should re-examine the problems of the human resource policies through more open and innovative points of view to create a livable, friendly, international, non-discrimination, and reasonable payroll environment to cultivate all kinds of talents, to retain local elites, to recruit outstanding global talents to increase our national competitiveness.



Section 2 · Recommendations

7.2.1 「Incubating Talents」

7.2.1.1 *The part of government*

7.2.1.1.1 To help obtain a professional license¹²²

As the saying goes, "The professional skills are better than wealth". Given high unemployment rate and popularization of higher education, the current value of the university diplomas might still be useful but not as good as a license. When the enterprises are completely unfamiliar with job applicants, the licenses can be indicators to quantify their abilities. The licenses benefit job seekers by raising salary, transferring to better jobs and upgrading knowledge. Higher education should help students strengthen ability but relevant licenses help employers save relevant internal training cost and enhance workers' workplace competitiveness.

7.2.1.1.2 The development of interdisciplinary talents

The word "talents" means differently in different fields. The talent means the high-tech personnels for the research institutions. The talent means the academic researchers for the higher education. The talent means the engineers and masters of the core areas for the industries. According to the trend of the world, a single type of the talents does not match the needs of the community. Cultivating talents with comprehensive skills are the future direction. The enterprises evaluate applicants mostly from the angle of the diversified qualifications and experience. When the talents have the Electrical Engineering

¹²² 今周刊，〈考一張黃金證照〉，2012年7月2日，頁112-118。

Bachelor degree, or Law degree or Business Administration's degree, these talents are most welcome to the enterprises. Those with diverse experience and qualifications are likely to have broader horizon to assist the enterprises. Thus, higher education should assist the students to gain professional and international perspective and help cultivate comprehensive knowledge to increase workplace competitiveness.

7.2.1.1.3 Reform of the higher education system

Lee Yuan-tse, The Nobel Laureate, advocated the "universal college students strategy"¹²³ by setting up universities a decade ago that aimed to upgrade the 5-year college system to be universities that are science and technology-oriented. Student enrollment as a result skyrockets along with the rapid expansion of universities. Therefore, the average schooling among people is generally university degree. However, the education quality becomes a great concern as a result. The quality of education among 164 colleges and universities has enormous difference. Worse still, professors are excessively pursuing SCI papers (given the requirement of appraisal system) at the expense of students (teaching quality suffers and hands-on experience is bypassed). The total numbers of Master graduates in Taiwan are more than one million people and 40% of them are with specialist qualifications. The unemployment rate is still up high but there is shortage of talents. University can not take enrollment as its sole concern but has to take up its social responsibility. There are still many higher education schools with poor quality. The government did

¹²³ 台灣醒報，〈高學歷、高失業 教部控管碩博士班〉，2012年7月31日。

not take positive actions to solve this problem, but spoiled those schools by allowing them to change names or to restructure to continue to enroll students who may not be built for higher study.

At the same time, the government is promoting the plans of “five-year-fifty billion program” to push some selected universities to pursue excellence in order to enhance our world visibility and research capability. The National Taiwan University in 2012 ranked 80 among the world's universities, a goal previously promoted by the education ministry. But this achievement did not upgrade the national competitiveness or the prospect of the future development of the nation. When a small number of elites spend the major educational resources, class antagonism is emerging and the gap between the rich and poor is expanding.

The government should encourage the development of universities that try to develop special characteristics. The research-oriented universities need to be strategically positioned with enterprises so that both could be mutually benefited. The Normal Universities should be the main sites to nurture the future teachers. The universities of tourism, hospitality or aerospace should be mainly service and technical personnel training places. In a word, the homogenization of universities is not beneficial to the social progress and national development..

The Ministry of Education has approved the validity of 41 Chinese university degrees¹²⁴, which is an important step toward recruiting talents abroad. The Ministry of Education must take into account the German

¹²⁴ 中國時報,《培育留才,世界名校可望來台設校》,2012年10月12日。

dual-system education system when reforming our higher education. The government responsibility is to cultivate various talents in all areas that are crucial to the national development. Thus, reforming the higher education system will help to solve the current talent plight.

7.2.1.1.4 Emphasis on human resources of the new residents

According to the statistics of the NIA, the number of the Taiwan foreign spouses are about 45 million, plus another 45 million foreign workers in a total of 900,000 foreign population. Compared to China, Hong Kong, Singapore and Korea recruiting the white-collar talents, Taiwan had a majority of blue-collar workers. The Government may consider recruiting talents from immigrants from the United States, Japan, Korea, and China. The government can assist them to work in enterprises, or research/academic institutions if not affecting the national security as another option of our talent pipeline.

Our government should establish mechanisms to help new immigrants households to adapt to mainstream society and set up a learning-friendly environment to facilitate their kids learning. The next generation of immigrants could be cultivated to be promising diplomats, translators, and multinational experts in the future. The flow of talent is a result of the economic development and globalization. In this wave of Brain Drain, the inflow of new residents is the Taiwan's new competitive advantages if the government tries to curb the worsening of the situation. The government should pay attention to this issue, coming up with measures to cultivate and recruit talents.

7.2.1.2 *The part of enterprises*

7.2.1.2.1 The establishment of talent smiling curve¹²⁵

Industrial upgrading requires talent. The international competition for talents hastens the crisis. To solve the talent problem should have pragmatic attitude. The industries should continue to upgrade both ends of the "Smile curve" that need to have workers of the basic ability and creative talents. The left end of the "Smile curve" is the product design, packaging design, the user interface design which should be extended to the real research as well as development and be able to apply the patent that need the basic research talents. On the right end of the "Smile curve" is to promote the international marketing and brand management, overall strategic vision to grasp market trends and consumer demand that need the marketing management talents.

The "Smiling Curve" has the invisible line above that is able to make future consumer demand research of innovative research and development projects, and the exact combination of research and development and market demand. Thus, this kind of talents must be considered of the human nature through the holistic education with the communication and researching abilities. The management capacity of the local enterprises and local market could be extended to the international business and overseas markets if Taiwan's education incorporates training of global citizenship thinking, having the insight into the similarities and differences of different cultures, commanding and the cross-cultural communication ability with the depth of reasoning thinking.

¹²⁵ 別蓮蒂，《微笑曲線兩端需要的人才》，2012年9月5日，頁105。

7.2.1.2.2 The establishment of brand image

Given the change of industrial structure, to establish the brand name of the enterprises is the road to continued development. Taiwanese enterprises are mostly OEM manufacturers that upstream manufacturers swallow the profit. The enterprises must check if they command the benevolent spirit¹²⁶ and created value. The government should assist the enterprises to shorten products supply chain, encourage the enterprises to establish their own brand name and set up talent cultivation center to recruit talents who won medals from the international contests or science competitions. The legislations ensure the patents protection to increase the competitiveness.

7.2.2 The jobs of "Incubating talents" and "Recruiting talents"

7.2.2.1 The part of government

7.2.2.1.1 To provide the healthy infrastructure and construction

The government must be cautious of the course of "Brain Drain". But this problem cannot be addressed by amending the law and spending the money in the short term. The factors of influencing foreign talents recruitment include a country's education system, living environment, social welfare, corporate features, etc. Under global knowledge economy, talents have become the target for many countries. The local talents have the advantages of the geographic proximity and familiar cultural background. The government shall improve the

¹²⁶ 聯合報,《施振榮:政務官是被媒體打笨》,2012年11月22日。"The benevolent spirit(王道精神)" means from the enterprise to serve the interests of stakeholders, including even the social and natural resources and responsibility to think about how to do better than the competition. "The apple completely integrated value chain model" is a benevolent spiritual of practicing "The benevolent spirit". The greatest extent to meet the consumer of Apple, followed by pulling the manufacturing supply chain components manufacturers, software open strategy and let the developers have some benefits.

enterprise “hardware” development that can help keep the local talents and reverse the problems of "Brain Drain"¹²⁷. Thus, it is more important to make full use of local talents than the introduction of foreign talent.

7.2.2.1.2 Improve the administrative efficiency

Taiwan is located at the Center of the Asia-Pacific area and can attract foreign investment and talents by its excellent conditions. But the major criticism by investors is the cumbersome administrative procedure, narrow-minded protectionism and timid working attitudes that discouraged foreigners to come to Taiwan. Moreover, due to the slow pace of the document review and populist consciousness, Taiwan government often refused foreign investors at bay and the civil servants are afraid of making mistakes such that their mindset not only caused official inefficiencies but also deterred the foreign companies from investing in Taiwan. Thus, the foreign talents do not work in Taiwan, and worse, lure our talents away. These factors cause the talent chain scission which is detrimental to the long-term development of the country. It is important to improve the administrative efficiency to attract investments.

For example, as to the investment of Singapore and Hong Kong, their governments designate for the foreign businessmen the exclusive responsible departments which are responsible for all foreign investment applications. The granting of licenses can be completed within one month and furthermore they are given the most preferential treatment in order to facilitate investment. They believe that the economic development of the country is based on giving more

¹²⁷ 遠見雜誌，〈人才流失與人才浪費〉，2012年5月。

flexibility, increasing the efficiency, establishing clean and efficient government and accepting the international talents. Taiwan has the similar situation with Singapore, Hong Kong that is lack of the nature resources. The prosperity of Taiwan's economy is not second to Singapore and Hong Kong, but the foreign companies do not favor making investment in Taiwan. The key reason is the attitude of the Government which needs to change to create an international investment friendly environment. Thus, Taiwan was able to attract the foreign capital and talents that in turn could provide the local talents with more working opportunities.

7.2.2.1.3 Substantially relax the Immigration Act

Taiwan is an island lack of natural resources. The artery of supporting Taiwan's economy is trading and the main industries are dominated by electronics, manufacturing, processing and trading. However, the most criticized problem in Taiwan for the foreigners is the regulation and investment environment. The politicians boycott the motion to reform that caused the foreign investors escaping from the Taiwan market.

Thus, the government would try to attract the investment and professional & technical immigrants by deregulating the Immigration Act and optimizing the investment environment. The CEPD and CLA have proposed a number of programs, for example, the relaxation of the high-level foreign professionals for permanent residence provisions which are extended and they can freely change jobs or re-employment. The relaxation of policy on Chinese business people is they can have the multiple entries and exits. The professionals foreign can apply for the permanent residence if they could continuously work for two years. The

retirement policy for the international talents is reformed. The FDH employment regulations are relaxed in which senior managers or professionals hiring foreign domestic helpers for more than three years may be granted approval to hire the FDH. The overseas Chinese graduates are able to stay for internship in Taiwan. The related restrictions of the overseas Chinese and foreign students staying for jobs are abandoned.

The above deregulation is the progress for the investment. In addition, the Government should ensure the country is safe so that more is needed to continue to review the deregulation of the investment-related laws. Moreover, the government shall reduce the cumbersome application procedures, relax the Investment Act, and encourage the foreign investors to expand their investments and the flow of talent. It is important to strengthen penalty responsibility of the Business Security Law by severely punishing the disclosure of trade secrets or malignant headhunting in order to insure the business development and national security.

7.2.2.1.4 The implementation of the investment protection agreement

In recent years, Taiwan's high-tech talents were recruited by the Chinese industries from the TSMC, Media-Tek, AUO and CMO¹²⁸ and other well-known electronics manufactures. The R&D managers took the R&D teams and key technology to China, which is a serious threat to enterprise survival and Taiwan's competitiveness. The Chinese enterprises normally owned by the government have extremely strong financial strength to recruit high-tech professionals through high payment such as at least of NT \$ 10 million per year. Thus, in order

¹²⁸ 自由時報,《帶槍投靠中 薪水達4.6倍》,2012年11月22日。

to avoid the loss of scientific and technological personnel, the government has repeatedly negotiated with the Chinese government with the hope that the key talents between the two sides could be managed in a way that will not threaten Taiwan's long-term development. However, this is not an easy mission for the government to implement the "cross-strait investment protection agreement" to secure the intellectual property rights of our industries. The government shall assist the victims to sue to prevent the outflow of business secrets.

7.2.2.2 *The part of enterprises*

7.2.2.2.1 Improving the personnel salary

The key reason of "Brain Drain" is mainly the low remuneration. The public sectors shall curb the current situation of "Brain Drain" through the improvement of the welfare system and increasing the research fundings that can improve research environment and make salary attractive enough so that the payment gap with the foreign countries could be narrowed. Thus, the talents may stay and contribute to this country. As to the private sectors, the government should ask the enterprises to carry out social responsibility to improve employees' salaries and the working environment to generate the centripetal force in order to build the consensus. When the public and private sectors use high-standard treatment to retain the talents, they can create more wealth and competitiveness for the enterprise and this nation in the future.

In the past, Taiwan's high-tech industry used the stock bonus system to attract the talents, but the industry can no longer attract talents after the implementation of the bonus expense policy, resulting in the salary level lower than the foreign countries. Business is business. We can hardly expect talents to

command loyalty to their enterprise. Therefore, it is no surprising that key talents are attracted to turn to Chinese enterprises. The talent is the capital of the country such that the "Brain Drain" of high-tech enterprises constitutes a serious threat to the country. Thus, the companies must improve the working conditions and offer reasonable wages and benefits, treating employees as members of a big family, just like the business model of the Google, Facebook, Microsoft and other foreign companies where employees treat their jobs as their own business and share the benefits with each other. Thus, the employees are loyal to the company and the company gives the favors to the employees, which enhance employees' corporate identity and the so called 'happy enterprises' will happen, leading to sustainable development of the enterprises, society and the nation in the long run.

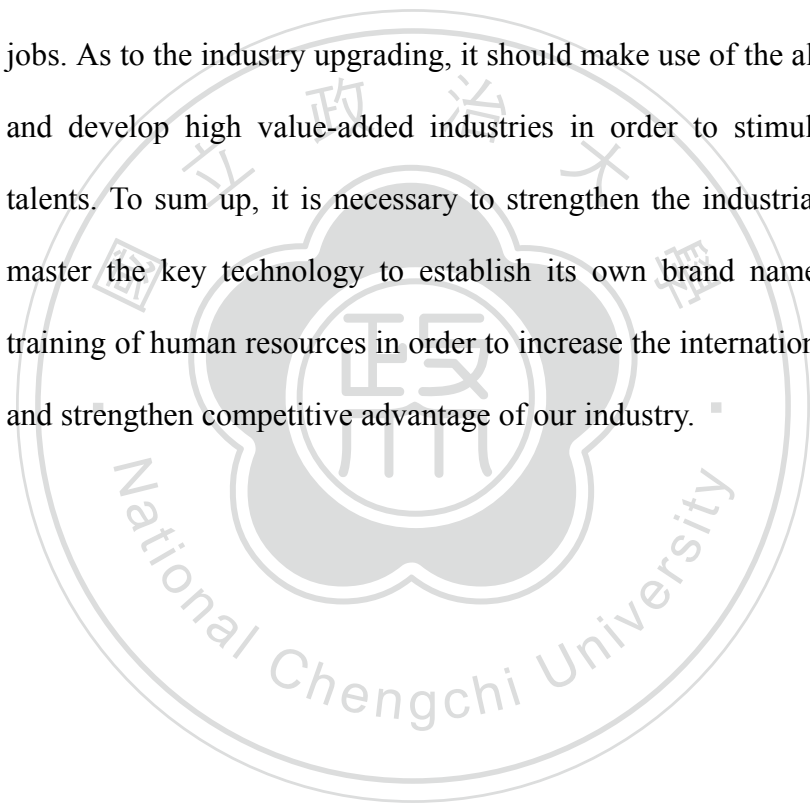
7.2.2.2.2 Promote the industrial restructuring

Taiwan is a country lack of natural resources. Taiwan manufactures products by importing raw materials and then exporting to other countries, mostly through trade. The number of Taiwan's manufacturing workforce peaked in 1987 and that number decreased with the outflow of jobs to China, a crisis of industrial hollowing out. Thus, the industry will have to try to gain competitiveness through seeking new mechanism to generate surplus value.

In the past, Taiwan's industry took advantages of upgrading the economy such as optoelectronics, information, OEM, ODM, but now is gradually caught up with by Korea, Japan, and China. Taiwan needs to think about what are the industries of next generation in order to regain its competitive edge. The government began to re-adjust the structure of the economy in order to speed up the development of the high-value and service industries by selecting six new

industries, four new smart industries and ten services industries to reverse the image that used to accompany the foundry and low-profit industry. It is hoped that the government can really implement policies of industrial restructuring that is crucial to long-term development of Taiwan's economy and industry.

In addition to the formulation of the future direction of the country, the industrial policy should be well-planned to provide opportunities of productive jobs. As to the industry upgrading, it should make use of the alternative resources and develop high value-added industries in order to stimulate and retain the talents. To sum up, it is necessary to strengthen the industrial restructuring and master the key technology to establish its own brand name and improve the training of human resources in order to increase the international competitiveness and strengthen competitive advantage of our industry.



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Appendix

Appendix-1 Academia Sinica

中研院長官您好  



 **man key** 中研院長官您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在撰寫論文，題目暫定「從台灣人才危機探討人才政策」，由於內 11月3日 (13 天以前) ☆

 **aspublic@gate.sinica.edu.tw**

11月14日 (2 天以前) ☆

寄給我 

曾同學：您好！

有關來信提及您的論文「從台灣人才危機探討人才政策」需要相關資訊，您可參考本院新聞稿「中央研究院發布〈人才宣言〉呼籲重視人才供需失衡問題」網址：<http://www.sinica.edu.tw/manage/gatenews/showsingle.php?op=?rid:4276>，引用並請註明出處，謝謝！



敬祝
學安

中研院總辦事處秘書組 敬上


--- 原始郵件 ---


>Date: Sat, 3 Nov 2012 11:15:59 +0800
>From: man key <keymonster@gmail.com>
>Subject: 中研院長官您好
>To: aspublic@gate.sinica.edu.tw

Appendix-2 National Science Council

國科會長官您好  



 **man key** 國科會長官您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在 11月3日 (9 天以前) ☆

 **資訊客服信箱**

11月5日 (7 天以前) ☆

寄給我 

您好：

關於您所提之人才相關行政問題，請您與人才培育辦公室人員聯繫。(廖沛茹 小姐02-2737-7123)

未能立即為您解答，敬請見諒。

如有任何系統操作上的問題，歡迎您再來電詢問(0800-212058、02-27377592)，謝謝您。

國科會資訊小組敬上

From: man key [mailto:keymonster@gmail.com]
Sent: Saturday, November 03, 2012 11:12 AM
To: 資訊客服信箱

Appendix-3 Industrial Technology Research Institute

工研院顧客服務回覆您的諮詢，請參考！！   論文 x

 0800@itri.org.tw 曾先生 您好：非常感謝您對工研院的支持與愛護，關於您的 11月5日 (7天以前) ☆

 man key 工研院長官您好 請問一下貴院有無掌握近幾年台灣人才外流之相關數 11月5日 (7天以前) ☆

 0800@itri.org.tw 11月5日 (7天以前) ☆  

寄給我 

曾先生您好：

非常感謝您的支持與愛護，關於您詢問的問題，目前無提供此服務，謝謝您！

工研院客服部 敬上
工研院客服專線：0800-45-8899

寄件者: man key [keymaster@gmail.com]
寄件日期: 2012年11月05日 下午 12:03
收件者: 工研院0800專線

Appendix-4 National Taiwan University

有關畢業生就業調查資料問題   論文 x

 學生職業生涯發展中心 career@ntu.edu.tw 11月6日 (6天以前) ☆  

寄給我、suyun888 

曾同學 您好：




有關您提到的畢業生就業調查資料
因為本校資料不方便提供給外校同學做研究
且因個資法問題並為了保護台大同學的權益
這部分可能無法幫上忙



真的很不好意思
您可以詢問政大職涯中心或師大教評中心
希望對您有幫助


謝謝您的來信


台大學務處職涯中心




Appendix-5 National Chiao-Tung University


曾建銘同學您好，回覆您來信徵求交大畢業生相關數據等事項   

  論文 x

 交大就輔組_曾能昌 [image] 曾建銘同學您好 我們已收到您的信件，有一 11月5日 (7天以前) ☆

 man key 交大就輔組長官您好 學生論文題目為「從台灣人才外流現象探討 11月5日 (7天以前) ☆

 交大就輔組_曾能昌 11月5日 (7天以前) ☆  

寄給 交通大學校長室、我 

曾建銘同學您好：
有關您希望取得本校畢業生就業調查現況作為論文使用，
因資料受教育部規範，目前僅供校務參考，不得公開散布或用於其他用途，
恕無法提供給您，尚祈見諒。

§ 敬祝順心 §
國立交通大學
就業與升學輔導組 曾能昌
電話：03-5712121分機50663
傳真：03-5720602
信箱：nc50663@nctu.edu.tw
就輔組信箱：career@cc.nctu.edu.tw

Appendix-6 National Cheng-Kung University

RE: 校長您好，有事相求

論文 x



z8307010 z8307010@email.ncku.edu.tw

11月8日 (4 天以前) ☆



寄給我、成功大學學務處、em50000、生涯組

建銘同學, 您好!

來信收悉.

本校對於畢業學生就業調查現況及相關數據, 均已公佈在本校網頁中
其相關連結如下:

<http://stud.adm.ncku.edu.tw/sam/data/6.2.htm>

<http://grad.osa.ncku.edu.tw/files/11-1069-1098.php>

惠請參酌

順祝

心想事成

成功大學生涯發展組 敬啟 101.11.8

連絡人:陳孟莉 組長

06-2757575 #50481

Appendix-7 National Taiwan Normal University

校長您好，有事相求

論文 x



man key 校長您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在撰寫論文，題目暫定「從台灣人才危機探討人才政策」，由於內容需要有關 11月6日 ☆

張國恩校長 <president@deps.ntnu.edu.tw>

11月9日 ☆

寄給我

建銘同學你好

張校長已收到你的來信

經與本校負責此資料庫的教育評鑑中心主管討論後認為

目前本校不宜提供給你參考

因未經該四所大學同意

而且這些資料尚未釋出

你的分析對學校及個人都會有風險

特此說明

尚請見諒

校長室楊雲芳秘書代復

From: man key

Sent: Tuesday, November 06, 2012 11:54 AM

To: president@deps.ntnu.edu.tw

Subject: 校長您好，有事相求

Appendix-8 The Foreign Trade Association

外貿協會長官您好

論文 x



man key 外貿協會長官您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在撰寫論文 11月4日 (8 天以前) ☆

Julia Pink

11月5日 (7 天以前) ☆

寄給我

Dear 建銘:

很高興收到您的來信詢問。本組承辦業務為協助國內企業延攬海外人才回台服務，僅可提供歷年辦理方式與成果，關於您所需要的人才外流數據統計，可能得至相關主管機關索取。如有其他疑問請隨時來信聯繫，感謝您！

Best Regards,

Julia

Julia Wei

Project Manager

Business Alliance Section

Strategic Marketing Department

Taiwan External Trade Development Council

Tel: 886-2-2725-5200#1329

Fax: 886-2-2725-5967

Mobile: 886-956-191703

From: man key [mailto:mankey@gmail.com]

Sent: Sunday, November 04, 2012 10:57 AM

To: juliawei@taitra.org.tw

Subject: 外貿協會長官您好

Appendix-9 1111-Job Bank

1111人力銀行公共事務部-林賢雅 sylvia@staff.1111.com.tw 11月7日 (5 天以前) ☆

寄給我 ▾

曾先生您好：


隨信寄上近年有關海外工作意願的相關調查，
請不吝指教，希望對您有所幫助。
若有其它需求，歡迎來電賜教。謝謝

1111人力銀行 公共事務部

6 附件 一下載所有附件 (壓縮為 繁體中文 ▾)

 [企業人才困境調查OK.xls](#)
104K 檢視 以 Google 試算表開啟 下載

 [1010904人才荒新聞稿OK.doc](#)
46K 檢視 下載

 [1000926海外工作新聞稿.doc](#)
50K 檢視 下載

 [1000926海外工作經驗.xls](#)
107K 檢視 以 Google 試算表開啟 下載

 [1000526上班族西進意願調查OK.xls](#)
126K 檢視 以 Google 試算表開啟 下載

 [1000526上班族西進大陸新聞稿.doc](#)
46K 檢視 下載

Appendix-10 518-Job Bank

518人力銀行-客服留言板回覆通知 論文 x

518人力銀行 service@518.com.tw 11月6日 (6 天以前) ☆

寄給我 ▾

留言日期: 2012-11-06 16:58

您好 我是政治大學亞太英語碩士在職專班學生 曾建銘 0937124430，現在在撰寫論文，題目暫定「從台灣人才危機探討人才政策」，由於內容需要有關台灣近幾年人才外流相關數據，為讓論文內容確實，不知貴公司是否有掌握相關近五年高科技人才到外國或中國工作或挖角之數據，冀請提供相關現況與資料予以撰寫，個人會謹守保密規定予以參用。

■ 客服中心回覆：

您好 ^^
客服 0215 號 Mai 很高興為您服務

造成您的困擾，十分抱歉！
[目前企業會員刊登職缺與求職會員履歷資料](#)。
皆於518首頁右上方有系統統計相關數據可供您進行參考；
此外，於"找人才"、"找工作"頁籤中也都有企業刊登數及求職履歷數。
可先設定條件並搜尋，即可篩選出符合該人才筆數參考囉！

如果使用有任何問題
歡迎您留言諮詢
518人力銀行 感謝您的支持 ^^

Appendix-11 104-Job Bank

【104人力銀行】  

一零四 羅淑琳 lolin.lo104@104.com.tw 11月6日 (6 天以前)
寄給我 

未顯示圖片。顯示以下圖片 - 永遠顯示lolin.lo104@104.com.tw所寄的圖片





親愛的曾建銘先生您好：

關於您來函提及的問題，目前已找到類似報導文章，煩請您可點選以下網址查閱，另外，我們不定期將市調中心針對社會趨勢的調查結果發表於104人力銀行網頁(網址如下)，歡迎您可隨時參閱，若以上說明有任何不清楚之處，歡迎您可不吝再次來電或來函與我們聯絡，謝謝您！

「新生代」台幹西進 擔任業務、從事內需服務業比重漸增
<http://www.104hunter.com.tw/project/BEF00-00001-1456/03-1.htm>

104職場新貴報
<http://www.104.com.tw/area/noble/index.cfm>

104職場觀點
<http://www.104.com.tw/media/career.cfm>

祝您 鴻圖大展 事業順利

104 人力銀行 羅淑琳
電話：02-2912-6104 分機 8206
傳真：02-7705-1144
E-mail：lolin.lo104@104.com.tw

Appendix-12 E-job Job Bank

全國就業e網回覆您__人才外流相關數據乙事  

FindJOB FindJOB@mail.ejob.gov.tw 11月7日 (5 天以前) ☆  

寄給我 

Dear 曾建銘 先生 / 小姐 您好：

感謝您對「全國就業e網」的支持與愛護。有關 臺端陳述事項，本中心敬覆如下：

對於 臺端來函詢問人才外流相關數據乙事，因「全國就業e網」是由行政院勞委會職業訓練局規劃建置的，為保障求職求才隱私權及相關會員權益，本網站將依個人資料保護法，對於會員資料安全及隱私嚴格把關，不對個人或團體揭露會員個人資料，以確保會員個人隱私的安全。故無法提供「人才外流相關數據」進行研究之服務！造成不便，敬請見諒。

感謝您的來信，若對全國就業e網仍有其他相關疑問，歡迎您隨時撥打0800777888免付費電話，我們將竭誠為您服務。

敬祝 安康！

就業服務科技客服中心(全國就業e網)

求職組 網路電話 _____
電話：(0800)777-888
傳真：(02)7706-6123
E-mail：findjob@mail.ejob.gov.tw
網址：<http://www.ejob.gov.tw>

Appendix-13 The Vision Magazine

遠見雜誌編輯您好

論文 x



man key 遠見雜誌社您好，我是貴社忠實讀者，目前就讀政治大學亞太英語 11月2日 (10 天以前) ☆

gvm@cwgv.com.tw

11月6日 (6 天以前) ☆

寄給我

敬愛的 曾建銘 讀友：

您好！

經與主管同仁確認後，向您說明如下：

有關遠見雜誌2011年7月標題--「海外工作配套優，5年後人才外流更嚴重！」，所有公開的資訊，請您以雜誌刊登的內容為準，我們並無法提供其他的資料，還請您體諒。

此外，您另外詢問的天下雜誌標題--「從人力大國邁向人才強國」，

由於遠見雜誌與天下雜誌並非同一出版公司，

如您欲詢問天下雜誌內容時，建議您可以與天下雜誌客服中心聯繫，

其服務信箱為：bill@cw.com.tw。

Appendix-14 Commonwealth Magazine

天下雜誌總編您好 有事相求

論文 x



man key 天下雜誌總編您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在撰寫論文，題目暫定 11月3日 (9 天以前) ☆

bill@cw.com.tw

11月5日 (7 天以前) ☆

寄給我

親愛的 讀者：

您好，感謝您對天下雜誌群的愛護與支持，

敝社已收到您的來信，

相關資料均於雜誌內文提供，

如有需要查詢資料或請您至天下網站使用關鍵字搜尋，

謝謝您。

如之後有需要敝社為您服務的地方，

歡迎您的來電或來信，敝社將竭誠為您服務。

敬祝 安祺
天下雜誌客服部敬上
客服專線02-26620332
客服傳真02-26626048

寄件者: man key <mankey@gmail.com>
收件者: bill@cw.com.tw
日期: 2012/11/03 上午 11:32
主旨: 天下雜誌總編您好 有事相求

Appendix-15 The Immigration Agency

移民署署長信箱回覆信件編號：M1011114008

論文 x



移民署署長信箱 service@immigration.gov.tw

11月15日 (1 天以前) ☆

寄給我

請勿直接回覆本信,若需回覆本信,請至署長信箱網站填寫,造成您的不便敬請見諒

處理情形:

曾先生您好:

您於101年11月14日寄給署長的電子郵件，提及為撰寫論文，請本署提供臺灣近年人才外流數據及政府因應措施、配套等資料一事，茲答復如下：

有關人才議題，鑑於中研院翁院長於100年8月14日提出「人才宣言」，警示我國人才流失的嚴重性，行政院責成經建會邀集各相關部會，於100年9月21日、23日開會研商，提出「人才問題與因應方案」，分從育才、留才及攬才三大面向提出55項對策與42項法規修正建議，並由各部會配合辦理。

現行人才議題相關數據及政策，係由各部會彙理，包括：外交部、經濟部、教育部、經建會、勞委會及本署等。例如：經建會網頁的「人力資源發展專區」(<http://www.cepd.gov.tw/w1.aspx?sNo=0000124>)、本署網頁的「統計資料」專區(<http://www.immigration.gov.tw/lp.asp?ciNode=29699&ciUnit=16434&BaseDSD=7&mp=1>)等，均有相關資訊可供瀏覽下載。



以上答復，希望有助於解決您的問題，如果您還有其他疑問或不明瞭之處，歡迎隨時來電洽詢，我們將竭誠為您服務。

本署聯絡人員：葉秋玲
聯絡電話：02-23889393分機2581已電話回覆


敬祝
身體健康，萬事如意

移民署署長信箱 敬啟

Appendix-16 The Industrial Development Bureau

工業局長官您好  [論文](#) 



 **man key** 工業局長官您好 我是政治大學亞太英語碩士在職專班學生 曾建銘，現在在撰寫論文，題目暫定「從台灣人才危機探討人才政策」，由於內 11月12日 (4天以前) ☆

 **service** 11月15日 (1天以前) ☆  
寄給我 

曾建銘 君, 您好:

承詢有關人才外流數據及相關因應措施1節，敬復如下：

本局無人才外流數據可資提供，請諒察。

為解決人才外流可能衍生之斷層問題，經建會業已會商相關機關研提「人才問題與因應對策」，從「育才、留才、攬才」三面向，分別討論我國高階、中階與基層人才目前面臨之問題並提出因應對策。另為有效縮短學訓考用落差，提供切合企業需求及提升產業技術之創新人才，同時培育具國際移動力跨領域專業人才，行政院已於本(101)年核定「縮短學訓考用落差方案」，責由相關部會積極推動中。以上資訊可洽經建會。

經濟部工業局輔導國內工業界，提升國際競爭能力及強化研發能量，為解決我國產業結構調整衍生之人才需求問題，廣擴寬列經費，結合產學研專家，配合產業未來發展趨勢、區域產業群聚及產業特性等因素，規劃符合產業需求之完整培訓課程，推動各項工業技術人才培訓計畫；並自96年度起推動產業人才扎根計畫，媒合學校與業界建立產學合作案，導引學生參與實務習作及專業課程培訓，增加大專校院學生實作經驗，使學生提前瞭解產業現況，並誘發投入產業興趣，期達到提升學以致用比例與填補基礎產業之技術人力缺口目的。此外，為提升產業人才素質，推動建置各產業職能基準與能力鑑定，俾使產業關鍵人才之共同能力有標準可循，藉以提升相關科系學生就業力及在職人員職能，拉近人才供需雙方之距離，以連結職能缺口，充裕產業所需人才。

本案聯絡人: 曾慧林

聯絡電話: 02-27541255分機2613


經濟部工業局敬復



From: [man key](mailto:man_key)
Sent: Monday, November 12, 2012 10:51 AM
To: service@mcasidb.gov.tw
Subject: 工業局長官您好

Appendix-17 Mainland Affairs Council

從台灣人才危機探討人才政策<00004871>  [論文](#) 



 **macst@mac.gov.tw**

11月15日 (1天以前) ☆  

寄給我 

發文日期：101年11月15日

發文字號：陸經字第1010010179號

一、台端101年11月12日致本會民意信箱電子郵件敬悉；

二、有關台端因撰寫「從台灣人才危機探討人才政策」論文，請本會提供台灣近幾年人才外流相關數據等公務資料一事，因相關議題非本會業管權責，本會並無相關資料可供參考，謹致歉忱；

三、感謝您的來信，並祝健康快樂！

行政院大陸委員會 敬復

Appendix-18 The Vocational Training Council

有關所提台灣人才外流相關因應措施 中文 x

星詠 b7300026@evta.gov.tw 9:45 (9 小時前) ☆

寄給我

建銘君，您好！

您101年11月12日致本會電子信箱，已交付本局辦理答復，有關所提台灣人才外流相關因應措施，本局謹說明如下：

近年來，世界各國面臨全球化、人口結構改變、環境變化、能源短缺等問題，亟需依靠優秀人才解決困境，因此，紛紛提出人才培育政策及優渥的人才延攬誘因，以提升國家競爭力。因此，行政院經濟建設委員會針對目前高階、中階及基層人才面臨的問題，協調政府相關部會積極思考全方位之因應對策，以育才、留才及攬才三大面向作分析，再分別就高階、中階及基層三種不同的人才進行深入的研析。

人才問題攸關國家發展，深具緊迫性，為凝聚政府及社會各界對於人才培育之共識，行政院經濟建設委員會已召開多次跨部會會議研商檢討，並請相關機關研提具體行動措施，彙整完成「人才培育方案」、「縮短學訓用落差方案」、「人才問題與因應對策」，並公布於行政院經濟建設委員會網頁 (<http://www.cepd.gov.tw/主要業務/人力資源發展/人力培訓>)，請自行上網運用。

隨函寄送「本會人民陳情案件處理情形調查表」請惠撥冗填寫，並直接以電子郵件傳送至本局 evta@evta.gov.tw 電子郵件信箱。 感謝您的來信與建議

敬祝
身體健康！平安快樂！

行政院勞工委員會職業訓練局 敬啟

Appendix-19 National Youth Commission

回復提供人才相關資料 中文 x

曹家鳳 jftsaur@nyc.gov.tw 13:55 (5 小時前) ☆

寄給我

曾先生您好：

您於本(101)年11月12日致本會電子信箱敬悉，關於您所需台灣近幾年人才外流之相關資訊，本會並無相關研究調查，目前經建會有提出「人才問題與因應對策」及「人才培育方案」，另教育部已成立人才培育專案辦公室，建議您可逕洽經建會及教育部，瞭解相關內容。

以上資訊提供您參考，有關本會業務內容，您可至本會官網：<http://www.nyc.gov.tw>查詢，若有您需要的資料，歡迎您與本會聯絡。祝您一切順利

行政院青年輔導委員會 敬啟