Are Graduates of General Education Institutions More Competitive in the Job Market: Empirical Evidence from 2009-2010

By

Tian Shuzhan

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Supervisor: Professor Gábor Kézdi

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Abstract

The aim of this paper is to mitigate the high unemployment rate in current China. With a sudden increase in the demand for jobs, the expansion policy in higher education since 2003 has disturbed the demand-supply balance of educated manpower. China has the largest higher education sector in the world. Along with the achievement, however, the society is not prepared enough to absorb all the extra university graduates. I use the data on employment issue of year 2009 and 2010 from MyCOS institute and analysis them from the perspective of educational capacity and locations of universities. My conclusion is that China's universities should upgrade the quality of the general education sector instead of training their graduates in vocational colleges. This contradicts what Chinese people traditionally think about this issue.

Key words: China; "211" Universities; General Education; Vocational colleges; Employment

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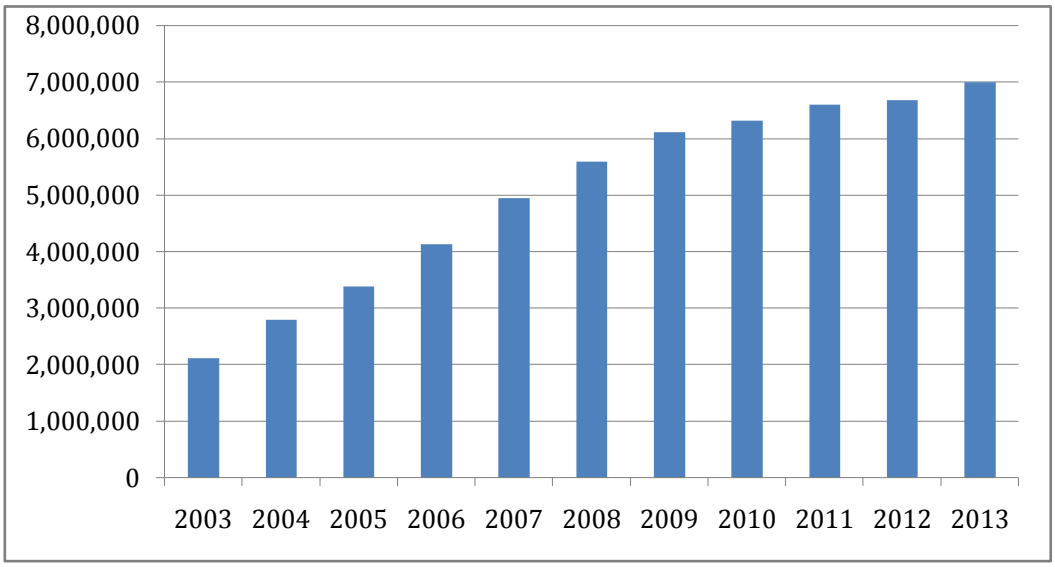
CHAPTER 1: INTRODUCTION

In 1999, the Chinese government decided to accelerate the pace of expansion in the higher education sector; since then, the enrolment number in higher education has dramatically increased, 513,000 more than that of 1998, which in total reached 1,597,000. The increasing rate was 47.4%. Similarly, the increasing rate in 2000 was 38.16%; in 2001, it was 21.61%. This year in 2013, there will be 7 million graduates who will join the job market after they graduate. (See figure 1)

Figure 1: Number of graduates in China from 2003-2013



Along with the achievement, however, the upsurge in graduate unemployment has dogged society since 2003, when the first batch of graduates after the expansion policy went to the market. Obviously, much research has been done in order to mitigate unemployment. In this paper, I will study the issue from a new point of view. The data I

use is from MyCOS institute,[1] which is relatively reliable. Higher education institutions are categorized into three levels, "211" universities, "non-211" universities and vocational colleges and the nation is divided into 6 regions according to the degree of economic development. By doing this, I will estimate how the capacity of education together with the location of the institute influences the employment rate of its graduates. The method I will use is OLS (ordinary least square). So the analysis will not be very technical, rather, it will be quite simple. However, since no one has done the research like this before, it is worth doing. From the analysis I get that the employment rate for "non-211" university graduates is somewhat the same with that of the "211" universities, but both of them are significantly higher compared to that of college graduates. Such results differ when regional differences are being considered. Average wages also vary a lot with the levels of institutions and locations. In a word, "non-211" university graduates do not suffer a low employment rate and college graduates cannot take advantages of being "experienced" either. The main resolution on unemployment is the universities upgrading the quantities of their education.

With a sudden increase in the demand for jobs, the expansion policy has disturbed the demand-supply balance of educated manpower. Though there is a rapid growth in China's economy, the society is still not prepared enough to absorb all the

[1] "MyCOS Data was established in 2006 and has quickly become the most trusted brand in higher education consulting and outcome evaluation in China. MyCOS aims to make a critical difference in higher education through our mission-driven vision and consulting services of the highest professional and scientific integrity. MyCOS uses complex and sophisticated data collection and mining technologies to develop graduate employment and education quality evaluation databases and consulting services for colleges and universities, governmental education bureaus, and research institutions. The resulting survey data form the foundation for China's first nationwide college graduate employment database." As shown in the official website of *MyCOS Data*. (http://en.mycos.com/About).

extra university graduates. Except the economic environment, the quality declining of education caused by the expansion is also problematic. The lack of educational recourse has made the higher education sector less and less responsible, especially those 211 universities, which were seen as the cradle of elites. For instance, professors cannot pay attention to the performance of all the students while hundreds of them are taking courses in one room. This again lowers the quality of higher education. What is more, students themselves do not study hard, especially students from "non-211" universities and vocational colleges, which makes the problem more and more insurmountable. Facing the marketization of higher education, some universities are even falsifying the employment rate of their graduates. Thus, the quality of higher education sector is waiting to be upgraded.

The paper is organized as follows. The second chapter is the literature review. Chinese education system in detail is shown in Chapter 3. I describe the data in Chapter 4 and show empirical analysis in Chapter 5. Chapter 6 concludes.

CHAPTER 2: LITERATURE REVIEW

2.1

Relating to the unemployment issue, we see a big achievement from the previous research. To start, the first question to answer is, obviously, if it is difficult for a graduate to get a job, or it is a problem faced by the whole society. Most of the researchers share the idea that China is now facing a severe unemployment of graduates. Wang Xiaofang claims in his paper "Education Excess in Higher Education: Fact or Semblance" that, in comparison with the demand of economic development, the scale of higher education is exceeding. The speed of higher education expansion should slow down so that the unbalance of supply and demand can be mitigated.[2] Tang Min, the economist who raised the expansion policy, also thinks that the current large scale of higher education is beyond his imagination, as well as the increasing speed.[3] Pan Maoyuan argued in his several papers that now in China there surely exists over education. The structure of higher education sector does not match the needs of China's current economic development.[4] Bai Limin points out that in developed countries the transition from elite to a mass of higher education was a nature result of the democratic education movement, the system and structures of higher education laid sound foundations for the expansion, still, severe unemployment exists.[5] What will happen in China after the huge jump from elite to a mass of higher education without foundations is predictable. On the contrary,

[2] Xiaofang Wang and Chuanqiang Xiao, "Education Excess in Higher Education: Fact or Semblance," *Journal of Jiangxi Science & Technology Normal University*, Oct. 2004, (No. 5).
[3] The original discussion is the speech by Min Tang in the conference " Employment of Graduates and the Integration of Chinese Labor Market" organized by Tsinghua University in June 24, 2006.
[4] Maoyuan Pan, "Higher Education research in China: Past and Prospect," *Journal of China University of Geo Science (Social Science Edition)*, Sep 2006, Vol. 6 No. 5.
[5] Limin Bai, "Graduate Unemployment: Dilemmas and Challenges in China's Move to Mass Higher Education," *The China Quarterly*, No. 185 (Mar., 2006), p. 135.

some researchers think that unemployment is not an educational problem, faced not only by graduates, but also by the other kinds of the labor force in the whole market. The unemployment issue of graduates is also a worldwide problem, to some extent, unemployment of graduates is reasonable and unavoidable.

2.2

The second question to answer is the causes of this issue. There are several reasons raised by the researchers, including the quantity and the quality of the labor force, the structure of the labor supply and so on. Prof. Dorothy Solinger, who is famous for her outstanding studies on China, has noted that the increasing unemployment rate is mainly caused by the expansion policy.[6] The development of the economy in China is not rapid enough to absorb all the graduates; there is not enough job vacancy in the market. Cai Fang pointed out that recently, capital is taking the place of the work force and delivers more pressure to the manpower.[7] Other than these, in order not to be unemployed by companies, students have become more and more interested in working for the government. Chinese people traditionally think that to be a civil servant is decent. Moreover, civil servants will not be easily fired in their whole working life, thus the job is almost risk-free. Many people take exams to become civil servants not only once but fail it again and again within 2 or 3 years. Tang Min, on the contrary, thinks that the high level educated elites is far from adequate. The difficulty of getting a job for graduates is

[6] Dorothy Solinger, "Jobs and Joining: What's the Effect of WTO for China's Urban Employment?" Prepared for the Conference, "The Political and Economic Reforms of Mainland China in a Changing Global Society," sponsored by the College of Social Sciences, National Taiwan University, Taipei, Taiwan, April 25-27, 2002.

[7] Fang Cai and Meiyan Wang, "On the Status Quo of China's Human Capital--How to Explore New Sources of Growth after Demographic Dividends Disappear?" *Frontiers*, Jun 2012.

not an employment issue of labor market, but a structural issue created by the higher education institutions. In a way, the departments in those institutions are not structured accordingly. Graduates with certain knowledge cannot catch up with the speed of demand changes in the market.

2.3

In the context of resolution, there exists a difference between domestic researchers and overseas researchers. Domestic researchers stick to the idea that the higher education institutions should not only deliver knowledge to students, but also help them to prepare for job-hunting. Since China is moving gradually to a market-oriented socialist economy, those institutions should cope with the changes and train their students accordingly so that the graduates can be more adaptable to the job market. Whereas in develop countries, the capitalist economic system is relatively mature. Researchers would say that the unemployment of educated labor force is brought by the use of new technology. To solve this problem, it is better to improve the structure of education rather than pay attention to the job market. Many researchers have indicated that general education is better than vocational education in case of the coming of the technology-oriented era. David H. Author and Dirk Krueger claim in their papers:

> Computer technology substitutes for workers in performing routine tasks that can be readily described with programmed rules… they may have contributed substantially to demand shifts favoring educated labor over the past three decades.[8] General education is costly to obtain, but enables workers to operate new production technologies. An economy whose policies favor vocational education will grow slower in equilibrium than one that favors

[8] David H. Author, Frank Levy and Richard J. Murnane, "The Skill Content of Recent Technological Change: An Empirical Exploration," *The Quarterly Journal of Economics*, November 2003, p. 1279.

general education.[9]

Other than this, graduates may not get a very satisfactory job right after they finish their study cause of the lack of experience and working skills. However, it is just a matter of time for well-educated students. It will make the job-hunting easier if graduates can change their expectation of the first job. There are also studies that analyze the unemployment issue from the view of labor markets. Since the labor force is over supplied, employers can easily take advantage and recruit the best of them. Meanwhile, the salary is dragged down and productivity is improved. For this reason, the unemployment issue can be treated as the disadvantage of the profit maximization of capitalist corporations. Solving this problem is going to be challenging.

2.4

There have surely been big achievements in previous works. Domestic researchers are appealing to improve the working skills of graduates in order to make them more competitive in the job market. In the mean time, the government should try to expand the market-oriented economy so that the market demand fits the labor supply. Overseas researchers think that general education is more suitable for the current economic situation than job-specific skills training, which means that the unemployment issue is basically about the structure of education, rather than the market. Nevertheless, China has its own history and system of education that can differ from Western countries. What is right in West may not apply to the current economy of China. So, in order to solve the unemployment problem of China, we are supposed to start from

[9] Dirk Krueger and Krishna B Kumar, "Skill-Specific rather than General Education: A Reason for US-Europe Growth Differences?" *Journal of Economic Growth*, 9, 167-207, 2004, p. 167.

the Chinese education system instead of copying something from the previous approach.

CHAPTER 3: CHINESE EDUCATION SYSTEM

In China, education is a state-run system. Under the Law of Nine-Year Compulsory Education, all citizens must attend school for at least nine years. At age 6 or 7, all kids start to receive primary education, it lasts 6 years. After accomplishing primary education, three years of junior secondary education (middle school) are compulsory, and this is followed by the non-compulsory three years of senior secondary education (high school). Middle school graduates may choose to continue their academic education in high schools or to switch to secondary vocational and technical schools. To enter a high school, students are supposed to take an exam after middle school while high schools of different levels recruit students according to their performance in the exam. Usually students who cannot even get an offer from a lower level high school would choose to go to vocational and technical schools, which offer a 3-year, post-middle education in fields of commerce, legal work, fine arts, cooking, tailoring, carpentry, welding and so on. Some provinces may have 5+4 system for compulsory education.

There are two semesters in one year, beginning on September 1 and March 1, with a summer vacation and a winter vacation. Compulsory education is tuition-free; parents only pay a small amount of the expenses.

The academic curriculum in secondary schools consists of Chinese, Mathematics and English, which are considered as three main subjects as they will be examined in National Higher Education Entrance Examination. Students also need to be

examined in either natural sciences, which incorporate Physics, Chemistry, and Biology, or social sciences, which incorporate Geography, History and Ideology & Political science. After finishing secondary education, students can choose either to go to university or to vocational and technical college.

By April 2012, China has in total 2,138 higher education institutions, including public universities, private universities and colleges. Public universities include "211" universities and "non-211" universities. "211" universities are in general better than the "non-211" ones.

> "Project 211 is a project of National Key Universities initiated in 1995 by the Ministry of Education of the People's Republic of China, with the intent of raising the research standards of high-level universities and cultivating strategies for socio-economic development. During the first phase of the project, from 1996 to 2000, approximately US$2.2 billion was distributed. 6 percent of the institutions of higher education in China belong to 211 Project. 211 Project schools take on the responsibility of training four-fifths of doctoral students, two-thirds of graduate students, half of students from abroad and one-third of undergraduates. They offer 85% of the state's key subjects, hold 96 percent of the state's key laboratories, and utilize 70% of scientific research funding. The name for the project comes from an abbreviation of the 21st century and 100 (approximately participating universities)."[10]

Universities select their students based on students' performance in the National Higher Education Entrance Examination. In this case, the entrance scores required by "211" universities are higher than those of the "non-211" ones.[11] Both "211" universities and "non-211" universities are public universities and in general better than private universities. Students who failed to get a satisfactory score may stay in the high school for another year, so selection bias here is negligible. Private universities also offer

[10] The recourse is from *Wikipedia*, Project 211, (http://en.wikipedia.org/wiki/Project_211).
[11] The full mark of the national college entrance examination is 750 for most of the province. In order to get enrolled in a "211" university, the minimum requirement is around 580 points; for good "non-211" universities, around 500 points is required. But there exist some universities, which are in general worse than the colleges where students can get enrolled with very low scores.

bachelor degrees so students who could not perform good enough to get enrolled in public universities will go to private universities. Other institutions are vocational colleges; they accept students graduated from high schools with the lowest score in the College Entrance Examination and students from secondary vocational and technical schools. Note that universities will not accept students who graduate from secondary vocational and technical schools. College graduates who want a bachelor's degree can apply for a one-year program in the universities; such programs are offered especially for them. Table 1 is the educational stages in China.

Table 1: Educational stages in China

Age	Education	Levels	Compulsory
3-5	Kindergarten/preschool	No	No
6-11	Primary school	Grade1-6	Yes
12-14	Middle school	Grade7-9	Yes
15-17	High school Vocational school	Grade10-12	No
18-22	University	Bachelor degree	No
18-21	Vocational college	College degree	No
22+	Graduate program	Master & doctor	No

CHAPTER 4: DATA DESCRIPTION

It is always very difficult to get proper data set relating to the employment issue. Firstly, university can only collect the employment information before the students graduate and they are not quite motivated to trace their graduates. In this case, the data from universities are usually unreliable as the employment rate can be lower than the reality. Second, even for these "unreliable" data, still sometimes the universities give false reports in order to build prestige. Such dishonesty makes things even worse. Third-party institutions seldom collect such data because the work is costly and unprofitable. There are some reliable data but they do not include all the universities of the nation. MyCOS Institute is one of the most trusted institutes in higher education consulting and outcome evaluation in China. They have published 5 Chinese College Graduates' Employment Annual Reports for each year since 2007. The data I will use is from the annual reports of 2009 and 2010.

Take the data of 2009 for example; they started the investigation at the beginning of 2009, half year after students graduated in 2008. They distributed around 500,000 questionnaires by email to the graduates from around 2000 higher education institutes, including "211" universities, non "211" universities and vocational colleges and 200,000 people responded. Questions were about their employment status and other related issues. They made several lists ranking the employment rate by regions and tried to distinguish the differences between the developed regions and undeveloped regions. What I will do is to put all the data together and re-estimate the employment rate categorized not only by region, but also by the educational capacity of universities. The

three levels of capacity will be presented as “211” universities, “non-211” universities and vocational colleges as discussed before. I have to be very careful and input numbers manually in order to make the best use of it. In the making of the annual report of 2010, they distributed the questionnaires again and did some other analysis. Since they did not make the same lists, it is not possible to get a time series data. That is why I will use cross section data of 2009 and also available data from 2010 to support the result I get from the estimation.

As noted above, China is divided into 6 regions. After graduating from high school, students will choose the best possible university accordingly based on their performance in the National Higher Education Entrance Examination. Meanwhile, they also take the location of the university into consideration. This makes it inexplicit if we take all the university in this country as a pool. For example, those universities in their own province or their neighbor province are much more preferred than universities of the same educational level far away as families believe that the short distance makes it easier to take care of the children. Also, universities located in a more developed province are much more preferred than those located in a less developed province. Plus, most of the graduates would prefer to work in the same region where they studied as they think they are quite familiar with the social and even natural environment there, thus there is very little interregional migration among those graduates. The 6 regions are Southwest China, Northwest China, Northeast China, North China, South Central China

and East China.[12] The provinces located in one region share the same geographical environment and the economic development of one province is influenced deeply by the others. To see the difference in the employment rate between different levels of universities for each region, I take all the "211" universities and top 20 "non-211" universities. Talking about vocational colleges, the data from 60 of them are very reliable. Obviously, there are more than 60 colleges in the entire country, but from the previous research we do not see obvious differences between one college and another. Students who will study in vocational colleges usually make the choice according to the location and major discipline of the college. They prefer to study and work near their hometown or exactly in their hometown. So there is little interregional migration also among those college graduates. In this case, the 60 colleges are quite representative. The same reason for "non-211" universities, I will mainly talk about those somewhat competitive universities. For those universities that high school graduates can get enrolled in with a performance of 300 points in the National College Entrance Examination, further discussion is needed.

There are in total 307 universities in the sample. Employment rate is measured half year after those students graduate. This is reasonable since students who would like to enjoy the university usually join the job market after they graduate. Only a few of them start to send CVs before graduating and successfully get an offer by the time they

[12] Hong Kong, Macao and Taiwan are not included. Southwest China includes Chongqing, Sichuan, Guizhou, Yunnan, and Tibet; Northwest China includes Shanxi, Gansu, Qinghai, Ningxia and Xinjiang; Northeast China includes Liaoning, Jilin and Heilongjiang; North China includes Beijing, Tianjin, Hebei, Shanxi and Inner Mongolia; South and Central China contains Henan, Hubei, Hunan, Guangdong, Guangxi and Hainan; East China includes Shanghai, Jiangsu, Zhejiang, Anhui, Fujian, Jiangxi and Shandong. Map of China see Figure 1 in Appendix.

step out of the university, we can call this half-year "buffering time". Employment rate is the most important variable I will use in this study. Other variables are as follows. Average earnings of graduates are also measured half year after students graduate. Using this as a dependent variable can tell us how the levels and the locations of the university influence the average salary. For example, a student who is graduated from a university with lower employment rate may expect less when they negotiate with the employer, thus he may get employed easily. Also, a student from a good university will expect a high compensation, thus he may not agree on the contract if the company offers less, this will then decrease the employment rate of a good university. The cost of getting a job[13] also varies a lot across universities. From this variable, we can figure out how the location and the level of the university decide the effort its graduates have to put in order to get employed. Additionally, we can comment on the problematic structure of higher education with the help of the data from 2010. For instance, for those graduates from Zhongnan University of Economics and Law, the average cost of getting a job is 1923 RMB yuan, more than twice of the cost for students from China University of Petroleum, which is 906 yuan. An obvious reason for this difference is that although these two universities are of the same educational level, the latter concentrates its courses more on the petroleum market, and there is a huge demand of graduates in this market. The former instead delivers general education in the field of economics and law. It is true that nowadays in China, the labor supply for such fields is way ahead of the demand.

[13] The cost of getting a job includes all the money a graduate spend on the preparation of job-hunting, such as the cost of travel & accommodation, cost of suit, books etc. The responders themselves approximately calculated this.

Although graduates are equally educated in general, the cost for graduates of the former is much higher since they might have to wait for a longer period until they get a satisfactory job. I will talk about it in detail in the next chapter. The same reason also explains the difference in the numbers of CVs the graduates have to send in order to get one callback from employers. The last variable is the percentage of alumni who would like to recommend their alma mater to their friends and relatives. This can totally explain their degree of satisfaction with the education the university or college delivered. The employment rate together with the location and level of a university will also influence the graduates' satisfaction.

CHAPTER 5: EMPIRICAL ANALYSIS

Table 2: Statistics of the data from year 2009

		"211" universities	"Non-211" universities	Colleges
Observations:		110	137	60
Employment rate	Mean	0.9	0.9	0.88
	Standard deviation	0.037	0.036	0.046
CVs to send/callback	Mean	16	16	8
	Standard deviation	6.76	8.57	5.23
Average salary	Mean	2771	2361	1835
	Standard deviation	687	362	195
Degree of satisfaction	Mean	0.63	0.53	0.5
	Standard deviation	0.13	0.12	0.15
Job-seeking cost	Mean	1078	1149	964
	Standard deviation	301	361	340

Firstly, Table 2 is the statistics of the data from year 2009. We can see that, on average, both “211” and “non-211” universities achieved an employment rate of 90%. For colleges, the employment rate is 2 per cent lower. This is not hard to believe as I’ve already discussed before, only those students who cannot perform good in the College Entrance Examination would choose vocational educations. In a way, college graduates are treated as less educated, this is reflected also by the average salary, which can be seen as a measurement of the general capacity of the labor force. From the standard deviation

we observe that the employment rate for the universities is more stable than that of the colleges. We can explain this as the difference between general education and vocational education. Universities concentrate more on the general education sector; colleges basically deliver job-specific skills, and for some certain specialties, the market demand is really high. For example, from the annual report of 2010 we can see that college graduates major in engineering are almost all employed, whereas those students major in law are facing a high probability of being unemployed for a mentionable period.

The second index is the number of CVs a student has to send in order to get one callback from the employer. This time university graduates are not that lucky, they have to send on average 16 CVs for a single callback, twice as much as the CVs a college graduate has to send. The different concentration in courses between general education and vocational education also contributes this deviation. A graduate with a job-specific skill will basically send his or her CVs to a certain company where the skill is strongly required. Job-seeking cost of graduates shares the same reason. The standard deviation of "non-211" universities is around 2 points more than that of the "211" universities, means the variation among those "non-211" universities is wider. As is shown in the previous section, the index of "non-211" universities varies more may attribute to the location of the university.

Talking about the average salary of these 3 categories, we see no accident. From "211" universities to colleges, there is a descending. I will check in the regressions later if the different regions matter in this case. Whereas the standard deviation tells us the

range of variations within each category also descend from “211” universities to colleges. To some extent, the better a student perform in the College Entrance Examination, the less predictable the future of the student is.

The average degree of satisfaction of graduates from colleges is the lowest among the 3 categories. Students who enter a college with the worst performance in the College Entrance Examination and suffer a high risk of being unemployed will not recommend their colleges to others, which is reasonable. They may have the idea that if they could study hard in high school, they would be able to go to a university. With this thinking, they usually recommend their friends and relatives to study hard and get enrolled in a good university. However, we observe that for the rest 2 categories, the degrees of satisfaction are not much higher. With the help of the annual report of 2010, we see that the degree of satisfaction even decreased dramatically from 2009 to 2010. The reason can be multiple, such as sluggish economic growth, upsurge in the unemployment rate and so on. Further discussion will be welcomed in this topic.

Before starting the estimation, a statement about the “non-211” universities is support to be pointed out. As I discussed in the previous chapters, “non-211” universities are mainly about general education, but no better than the “211” universities. Many people thinks that it might be harder for a graduate from “non-211” university to get a job then for a graduate from “211” university. Additionally, since vocational colleges deliver job-specific skills, though the graduates are not as good as those university graduates according to the examination performance, the employment rate might be

higher than the “non-211” universities. However, we did not see a difference between “211” universities and “non-211” universities in the employment rate, and both of them achieve a 2 percent higher than the colleges is also hard to understand for Chinese people, as we think China needs more skilled labor force than any other era in the history. Is this a puzzle? Or are there some other reasons we can apply to explain the contradiction? I will try to figure this out with the help of econometrics models.

Firstly, take the employment rate as a dependent variable, the categories of higher education institutions as the independent variables, means 2 dummies. To follow the social norm, I will include “211” universities and colleges and the constant of the regression will be the employment rate of “non-211” universities. The model is as follows:

$$y_i = \alpha + \beta T_i + \gamma D_i + u_i$$

Where T_i equals to 1 if the university belongs to “211”, 0 otherwise; D_i equals to 1 if it is a college, 0 otherwise.

Using the same model, Table 3 is the results of all the regressions, where y_i has several alternatives.

Table 3: Results of $y_i = \alpha + \beta T_i + \gamma D_i + u_i$

Column	(1)	(2)	(3)	(4)	(5)
	Employment rate	CVs to send/callback	Average salary	Degree of satisfaction	Job-seeking cost
C	0.9016	16.41618	2360	0.5277	1149
	(0.003)***	(0.7331)***	(30.9477)***	(0.0163)***	(30.8837)***
211 universities	-0.0004	-0.2524	410	0.1057	-70
	(0.0047)	(0.9763)	(72.4599)***	(0.0163)***	(42.1637)*
Colleges	-0.0248	-8.4327	-526	-0.0325	-185
	(0.0067)***	(0.9952)***	(39.8388)***	(0.0215)	(53.5619)***
Observations	307	307	307	307	307
R-square	0.0608	0.1678	0.3257	0.1612	0.0402

Note: White heteroskedasticity-consistent standard errors & covariance. Standard errors are in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

From the results we can say that the difference between "211" and "non-211" universities in employment is not significant at any level. But for colleges, the difference will not be negligible. The number of CVs a college graduate has to send is significantly lower than that of a university graduate. The average salaries of these 3 categories vary dramatically, and all the variations are statistically reliable. College graduates not only suffer a lower employment rate, but also the lowest expected salary. Talking about the degree of satisfaction, around 53% "non-211" university graduates would like to recommend their school to others. The percentage for "211" university graduates is 11 points higher. College graduates have the same degree of satisfaction with the "non-211" university graduates. Job seeking cost for university graduates is not significantly different, whereas it is much lower for college graduates.

Precisely, China is a huge country of which every region has its own

geographical environment, as well as the economical. To see if the region element affects the employment rate and other sectors, I add 5 region dummies in the basic model, the model then becomes as follows.

$$y_i = \alpha + \beta T_i + \gamma D_i + \sum_{j=1}^{5} \delta_j R_j + u_i$$

Where R_j represents the regions, R_1 equals to 1 if the university is located in Northeast of China, equals to 0 if not. This applies also to j=2, 3, 4, 5, where the numbers represent different regions in China.

Table 4: Results of $y_i = \alpha + \beta T_i + \gamma D_i + \sum_{j=1}^{5} \delta_j R_j + u_i$

Column	(1)	(2)	(3)	(4)	(5)
	Employment rate	CVs to send/callback	Average salary	Degree of satisfaction	Job-seeking cost
C	0.9048	19.659	2405***	0.5259	1263
	(0.0044)***	(1.3353)***	(48.9962)	(0.0181)***	(54.4693)***
211 universities	-0.0056	-1.3576	299	0.0982	-40
	(0.0045)	(0.9373)	(61.7579)***	(0.0168)***	(42.1849)
Colleges	-0.0386	-9.5333	-717	-0.0524	-174
	(0.0065)***	(1.13)***	(55.7452)***	(0.024)**	(55.874)
Northeast	-0.0012	-5.6591	-189	0.0145	-96
	(0.0073)	(1.4851)***	(68.2156)***	(0.0273)	(71.17)
North	0.0012	1.2425	223	0.006	-235
	(0.0062)	(1.5757)	(90.5387)**	(0.0245)	(60.4572)
Northwest	-0.025	-7.2837	-323	-0.0262	-133
	(0.0076)***	(1.3658)***	(77.2678)***	(0.0269)	(65.8546)**
Southwest	-0.0128	-5.6507	-196	-0.017	-109
	(0.0066)*	(1.5652)***	(68.0989)***	(0.0255)	(83.0195)
East	0.0206	-2.439	274	0.0379	-167
	(0.0062)***	(1.3486)*	(72.5247)***	(0.0226)*	(58.1364)***
Observations	307	307	307	307	307
R-square	0.1785	0.2972	0.4536	0.1826	0.0882

Note: White heteroskedasticity-consistent standard errors & covariance. Standard errors are in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

Table 4 shows the results when the regional sectors are added. We can see that regions matter a lot in the variations of expected salary and number of CVs a graduate has to send in order to get one callback from the employer across universities, but not in the employment rate. Take a "non-211" university located in Northwest of China for example; the employment rate is 2.5 percent lower than a same level university located in South and Central China. This is easy to understand as we all know that the economic

development in South and Central China is way better than that of Northwest of China. Employment rates for all three categories institutions located in East of China are the highest; this is consistent with the degree of economic development in China across different regions. Average salary in East of China is also the highest; the second highest region is North of China. In other regions, the average salaries are significantly lower than that of East and North China. The regions do not matter significantly in the degree of satisfaction with the institutions for all the 3 categories, except the East China, which is relatively rich. I think what matters here instead could be the educational capacity of the institution. Students care about the locations of the institutions when they make decisions about where to go, but after graduate, the location will not help them in the job market. Unemployment issue is severe in all the regions in China. Job-seeking cost does not vary significantly across regions, or across levels of the institutions.

What has drawn my attention is that the difference in terms of average earnings is significant between "211" and "non-211" universities. This may explain the puzzle I pointed out before the analysis. "Non-211" university graduates do not suffer a lower employment rate may attribute to their lower expectation of earnings. Because of the fear of being rejected by companies and awareness of being less competitive, "non-211" university graduates successfully achieved the same employment rate with those "elites" from "211" universities. From this we can conclude that students' choices in favor of "211" universities are not only relating to the high employment rate, but also to the higher wages. It is also mentionable that the gap in average wages diminishes somewhat

when I try to control for the regional differences. For example, a graduate from "non-211" university located in North of China will have a prospective salary of 2600 RMB yuan, 200 more than that of a graduate from "211" university located in Northwest of China, which is only 2400 RMB yuan. The differences on the degree of economic development across regions contribute to this counterattack by "non-211" university graduates.

By adding the employment rate as an independent variable, we can see that it significantly affect the graduates' degree of satisfaction to their institutions, the result is not a surprise as the other indicators did not change a lot. For further interest, see Table A.1 in Appendix.

CHAPTER 6: CONCLUSION

After the analysis, we do not see that "non-211" universities suffer a disadvantage in the labor market in case of employment rate, which was quite unpredictable before the regressions. In this case, the rapid movement from elite to mass higher education is not as wrong as what other researchers and also I suspected. Graduate with job-specific skills from vocational colleges surprisingly cannot take advantage of being "experienced". This is consistent with what Western researchers have pointed out that higher education sector should care more about the general education in order to catch up the speed of economic development. However, the earnings for "211-non" university graduates are not that optimistic, though they are still way better than that of the college graduates. To mitigate the current unemployment, China universities may concentrate more on the quality of their general education, instead of training their students into workmen.

APPENDIX

Figure 1: Map of China

Table A.1: Results for adding Employment rate as an independent variable.

Column	(1)	(2)	(3)	(4)
	CVs to send/callback	Average salary	Degree of satisfaction	Job-seeking cost
C	44.4105	1707	-0.4864	2067***
	(11.367)***	(756.6572)**	(0.2047)**	(523.4741)***
211 universities	-1.5123	303	0.1046	-45
	(0.9427)	(61.6866)***	(0.0156)***	(42.4448)
Colleges	-10.5903	-687	-0.0091	-208
	(1.1411)***	(69.885)***	(0.0242)	(58.7817)***
Northeast	-5.6916	-188	0.0158	-97
	(1.4913)***	(67.905)***	(0.0275)	(72.5639)
North	1.2743	222	0.0047	-234
	(1.592)	(90.0296)***	(0.0242)	(60.9394)***
Northwest	-7.9663	-3.4	0.0017	-155
	(1.3396)***	(80.8326)***	(0.0255)	(67.8379)**
Southwest	-6.0003	-186	-0.0027	-121
	(1.5684)***	(67.7456)***	(0.0245)	(84.2036)
East	-1.8762	258	0.0149	-149
	(1.4163)	(78.6622)***	(0.0219)	(59.995)**
Employment rate	-27.3561	771	1.1188	-888
	(12.6444)**	(832.6329)	(0.223)***	(576.1017)
Observations	307	307	307	307
R-square	0.312	0.4558	0.2631	0.0968

Note: White heteroskedasticity-consistent standard errors & covariance. Standard errors are in parentheses. * significant at 10%, ** significant at 5%, *** significant at 1%.

BIBLIOGRAPHY

Belton M. Fleisher and Xiaojun Wang, "Skill differentials, return to schooling, and market segmentation in a transition economy: the case of Mainland China," *Journal of Development Economics*, 73 (2004), pp. 315-328.

Chunling Li and Boqing Wang, "Survey on Employment of College Graduates," 2008.

Dorothy Solinger, "Jobs and Joining: What's the Effect of WTO for China's Urban Employment?" Prepared for the Conference, "The Political and Economic Reforms of Mainland China in a Changing Global Society," sponsored by the College of Social Sciences, National Taiwan University, Taipei, Taiwan, April 25-27, 2002.

David H. Author, Frank Levy and Richard J. Murnane, "The Skill Content of Recent Technological Change: An Empirical Exploration," *The Quarterly Journal of Economics*, November 2003, pp. 1279-1333.

Dirk Krueger and Krishna B Kumar, "Skill-Specific rather than General Education: A Reason for US-Europe Growth Differences?" *Journal of Economic Growth*, 9, 167-207, 2004, pp. 167-207.

Fang Cai and Meiyan Wang, "On the Status Quo of China's Human Capital--How to Explore New Sources of Growth after Demographic Dividends Disappear?" *Frontiers*, Jun 2012, pp. 56-71.

Giles, John, Albert Park and Fang Cai, "How has Economic Restructuring Affected China's Urban Workers?" *China Quarterly*, 185 (March 2006), pp. 61-95.

Limin Bai, "Graduate Unemployment: Dilemmas and Challenges in China's Move to Mass Higher Education," *The China Quarterly*, No. 185 (Mar., 2006), pp. 128-144.

MyCOS Institute, "Chinese College Graduates' Employment Annual Report 2009, 2010.

Maoyuan Pan, "Higher Education research in China: Past and Prospect," *Journal of China University of Geo Science (Social Science Edition)*, Sep. 2006, Vol. 6 No. 5.