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## **Who is Unemployed, Employed or Admitted to Graduate School; An Investigation of the Employment Situation of College Graduates in China between 2003 and 2009**

*Abstract: In recent years, the employment of college graduates has become a focus of higher education policy and research in China. This article analyzes data from the National College Graduate Survey conducted by Peking University between 2003 and 2009, and examines the trends and factors influencing the path chosen by college graduates. Results show that (1) due to intensified competition in the job market and the impact of the 2009 financial crisis, graduates make diverse choices, with an increasing proportion entering graduate school and nontraditional employment; (2) over one quarter of graduates are unemployed, with*

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English translation © 2014 M. E. Sharpe, Inc., from the Chinese text “Shei shiye, shei jiuye, shei shengxue: 2003 nian-2009 nian Zhongguo gaoxiao xue-sheng biye hou fazhan lujing xuanze de guancha” by Bao Wei and Li Binglong. Translated by Michelle LeSourd. Originally published in *Qinghua daxue jiaoyu yanjiu* [Tsinghua Journal of Education], 2012 Vol. 33, No. 1, and funded by the National Social Science Major Projects Fund, “The problem of college graduate employment and countermeasures.”

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*increased likelihood of unemployment attributed to gender, low socio-economic status, rural origin, and insufficient educational and capital accumulation; and (3) employment choices are influenced by multiple factors, including individual differences, intuition attended, the job market, and the macro socioeconomic environment.*

## **I. Introduction**

The problem of college graduate unemployment has become more prominent since China entered the 21st century. The situation has worsened in recent years, particularly under the impact of the global financial crisis. As a special group among the unemployed in Chinese society, unemployed college graduates endure psychological, economic and social embarrassment, while their families also feel the many negative effects. The situation can also lead to acute social contradictions. Based on our own concerns about college graduate unemployment in China, we first collated and summarized prior research. On that foundation, we used data from the National College Graduate Survey conducted by the Peking University Graduate School of Education in 2003, 2005, 2007, and 2009 to explore changes in the paths taken by graduating college students in recent years. We examined group characteristics based on the different choices made by students and analyzed the underlying determining factors to provide a reference for future policy improvements.

## **II. Prior Research**

### ***1. Research Perspectives on College Graduate Employment***

Research on college graduate employment reflects changing trends and contexts in different eras. Higher education and employment was a hot research topic in the 1960s. It was hoped at the time that college education would actively promote economic development and social mobility. Economists and sociologists conducted a large volume of research to predict the future supply and demand of human resources. Their analyses focused on the rate of return of investment in education, occupational mobility patterns, socioeconomic background, and the impact of education on the socioeconomic status of individuals. During the 1970s, however, the focus of research in this field gradually shifted to the problem of a misalignment between the demand for skilled labor and the continually expanding scale of higher education. In this

context, scholars focused mainly on highly pessimistic concepts such as “over-education” and the “academic proletariat” (Schomburg and Teichler 2006). By the 1980s, college graduate employment had faded out of the mainstream of higher education research. In the 1990s, however, the relationship between higher education and employment was once again in the sights of researchers due to the rise of the knowledge economy, the massification of higher education, the relevance of higher education to labor market demand, the surging unemployment rate of college graduates, and the increasing pressure of social problems.

For many years, those examining the connection between education and employment were concentrated primarily in the fields of sociology and economics. Scholars engaged in long, in-depth discussions of the main concepts and theoretical problem areas in these fields (Karabel and Halsey 1977; Psacharopoulos 1987; Carnoy 1995). In the field of economics, the discussion focused primarily on the ability to regulate the market, demand for human resources, human capital theory, measuring the rate of return on education and the production, and screening functions of education. In sociology, researchers’ attention was directed mainly at opportunities for social mobility, the social class reproduction function of education, the role of education in strengthening and redistributing social status, and the impact of educational credentials on career development.

## ***2. Universal Exacerbation of College Graduate Unemployment after Financial Crisis***

There is a close correlation between the employment of college graduates and macroeconomic development. Economic downturns lead to the increased unemployment of graduates. The global financial crisis and economic recession led to a worsening of the already intractable problem of college graduate unemployment; rates reached record highs in all countries. According to a recently released European Union research report, the proportion of unemployed college graduates aged 25–34 years averaged 6.2% for European countries, among which Spain had a rate of 11.5% (*SpainNews* 2011). A 2010 survey by a British research institution indicated that one in every 11 graduates the United Kingdom were unemployed within six months after graduation. The unemployment rate for college graduates reached its highest level since 1993 (*The Guardian* 2011). In addition, the UK’s Higher Education

Statistics Agency implemented a long-term follow-up survey of graduates, which showed that nearly 28% of 2007 college graduates had still not found full-time work three and a half years after graduating (Higher Education Statistics Agency 2011).

Data from the U.S. Department of Labor indicated that, in 2010, 5.1% of Americans with a college education or higher were unemployed, the highest rate since 1970 (*USA Today* 2011). In addition, the Japanese Ministry of Education recently released the Basic School Survey indicating that, in 2011, 107,000 undergraduates in Japan either went on to further studies or did not find a regular employment position. The employment rate of new graduates was only 61.6% (*Sankei News* 2011).

The employment trends for Chinese college graduates have been similar. According to a MyCOS survey report, in June 2010, 42% of new four-year graduates in China signed employment contracts. The signing rate for vocational and polytechnic graduates was 43% (*Fazhi wanbao* [The Mirror] 2011).

### ***3. Causes of Unemployment among Higher Education Graduates***

The reasons for unemployment are extremely complex. A large number of prior studies examined the college graduate unemployment problem from three different perspectives, including the labor demand side, the supply side, and that of job seekers themselves. They then provided interpretations of the mechanisms behind the problem.

The labor demand perspective, or explaining the problem from the point of view of the labor market, can be summarized in terms of the following three categories: the market segmentation theory (Pan 2011; Lai and Tian 2005; Wu 2004; Yue and Ding 2004), the industrial development model theory (Kaneko 2011; Lai and Tian 2009; Bao 2010), and the labor market wage matching theory (Weng and Zhou 2009).

In addition, the labor supply perspective explains the relationship between higher education and the labor market, and college student unemployment, from the point of view of higher education institutions. Representative viewpoints include the over-education theory (Freeman 1976; Ashenfelter and Ham 1979) and the education-application matching imbalance theory (Gai 1990; Lu and Zhu 2008; Zhu et al. 2011).

Finally, the job seeker's point of view examines the origins of the higher education unemployment phenomenon from the individual perspective of college graduates. Representative viewpoints include the capital theory of status attainment (Fang 2009; Blau and Duncan 1967; Knight and Yueh 2004; Granovetter 1973; Lin, Ensel, and Vaughn 1981; Marsden and Hurlbert 1988; Wegener 1991; Bian 2004; Calvo-Armengol and Jackson 2005), and the career choice conceptual lag theory (Qu 2001 and 2002; Xie and Wang 2001; Bao 2007 and 2009). The various theories will not be described in detail here due to space limitations.

#### ***4. Characteristics of Unemployed Higher Education Graduates***

Chinese graduates coming from rural households and not holding Party memberships are significantly disadvantaged in the competition for jobs (Liu 2008). The social capital stock and actionable resources of parents can significantly increase the probability of their children's employment. In contrast, college graduates with a lower stock of household social capital are likely to experience the plight of the highly educated unemployed (Qin 2011). In addition, important factors affecting the employment of graduates include the academic level and prestige of the institution they attend, as well as the adequacy of the employment information provided by the institution (Yue and Ding 2004).

#### ***5. The Crisis Hidden Behind the Unemployment Data***

Higher education unemployment results in a serious waste of human and material resources (Yuan 2008). It impacts people's normal investment in education and education spending. On one hand, it may lead to middle-class families continuing to increase their investment in education and blindly pursuing higher education. On the other, it leads to increased risk of a decline in the return on educational investment, causing some low-income people to reduce or even abandon their investment in education (Shao and Hu 2006).

Compared to traditional unemployed groups, unemployed college graduates have a relatively weak capacity to withstand psychological frustration, due to their lack of systematic employment experience

and social and life experience. Increasing exacerbation of the unemployment problem may trigger the stress responses of anxiety, fear, interpersonal barriers, and irrational cognition, as well as mass incidents and crime. These could even become social unrest “powder kegs” with incalculable serious consequences (Jiang and Wang 2008; Yang 2011).

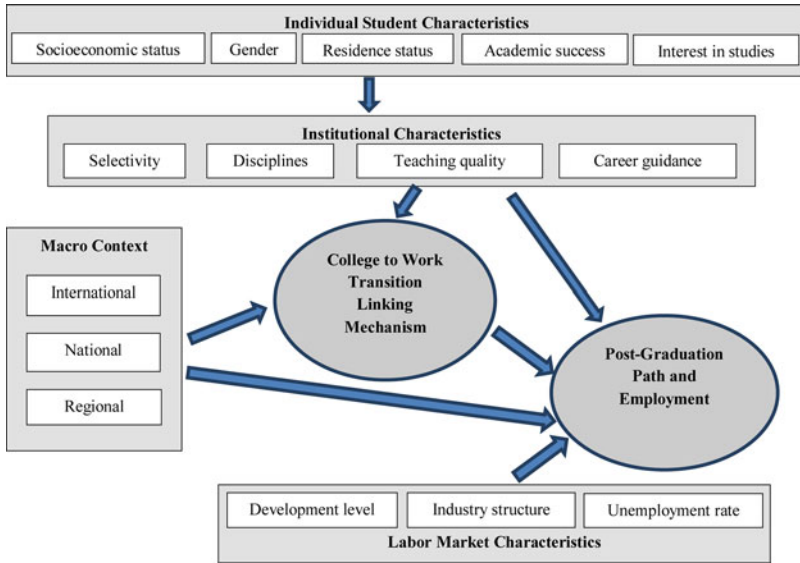
### **III. Analytical Framework and Description of Data**

A review of the prior research described previously enables us to grasp the complexity of the college graduate employment problem. Such complexity implies that an examination of the issue requires the construction of a multidimensional analytical framework to enhance the explanatory power of the research.

Between 1998 and 2000, nine European countries and Japan jointly implemented a survey of college graduates called *Careers after Higher Education: A European Research Study (CHEERS)*. The researchers included both systemic and individual characteristics in the study to develop a comprehensive analytical framework for examining the relationships between higher education, graduate employment and even career development (Schomburg and Teichler 2006). On the basis of such a theoretical framework and specification of the problem, this study addresses the four perspectives of macro context, individual characteristics of graduates, institutional characteristics, and regional labor market characteristics to build an analytical framework for examining the mechanisms influencing the paths taken by college students after graduation (see Figure 1).

For this study, we first hypothesized that students’ chosen path after graduation would be constrained by their individual characteristics. Specifically, we were concerned primarily with the impact of students’ socioeconomic background, gender, residence status, grades and interest in their discipline on the paths they take. Second, we examined the labor supply side, namely the impact of institutional characteristics on individual student development after graduation, specifically examining whether the institution’s academic prestige, disciplines, teaching quality, and career guidance affected students’ smooth transition into the labor market after graduation or choice of further study. In addition, our research also addressed the relevant characteristics of the labor market, namely the impact on student choices exerted by

Figure 1. Analytical framework of the study.



the socioeconomic development level, industrial structure (proportion of tertiary industries), and overall supply and demand structure (urban employment and unemployment rates) of regional labor markets. Finally, after controlling for the individual, institutional and labor market factors described above, we focused on the impact of the macro context on the path students chose after graduation. We paid particular attention to the shock effect on China’s graduates of the global financial crisis after 2008.

The material used for this study came from the pooled data from the nationwide questionnaire surveys of college graduates conducted by the Peking University Graduate School of Education in 2003, 2005, 2007, and 2009. The total sample size from the four years of surveys was 70,803 persons. The proportion of the sample from each survey year were 24% from 2003, 28% from 2005, 21% from 2007, and 27% from 2009. The colleges and universities in the survey were distributed across 24 provinces, directly administered municipalities and autonomous regions within China. Those in the eastern region comprised 58% (including Liaoning, Hebei, Beijing, Tianjin, Shandong, Jiangsu, Zhejiang, Guangdong, Guangxi, and Hainan); 21% of institutions were

in central China (including Heilongjiang, Jilin, Shanxi, Henan, Hubei, Hunan, Anhui, and Jiangxi), and another 21% were in the western region of the country (including Shaanxi, Guizhou, Ningxia, Sichuan, Xinjiang, and Yunnan).

The characteristics of the overall survey sample were distributed as follows: men accounted for 56%, while women comprised 44%; 91% of students were Han Chinese, while ethnic minority students accounted for 9%; urban students comprised 31%, while the proportion of nonurban students (including counties, towns, and rural areas) was 69%. By institution type, 12% of graduates attended universities in China's "985" program, and 13% came from institutions with the "211" program designation. Graduates from general undergraduate institutions and vocational/polytechnic colleges respectively comprised 53% and 22%, respectively. In terms of discipline, 15% of all graduates were in the humanities (including literature, history and philosophy), 32% studied the social sciences (including economics, law, education and management), 31% were in engineering (including military affairs), and 22% studied science, agriculture and medicine.

It is also important to add that, to examine the labor market's impact on the paths taken by graduates, we used the additional indicators of regional per-capita GDP, proportion of tertiary industry output value to overall GDP, and registered urban unemployment rate per survey year and by the province, municipality, or autonomous region in which each institution was located. The specific data were taken from the *China Statistical Yearbook* for each year.

## IV. Data Analysis and Results

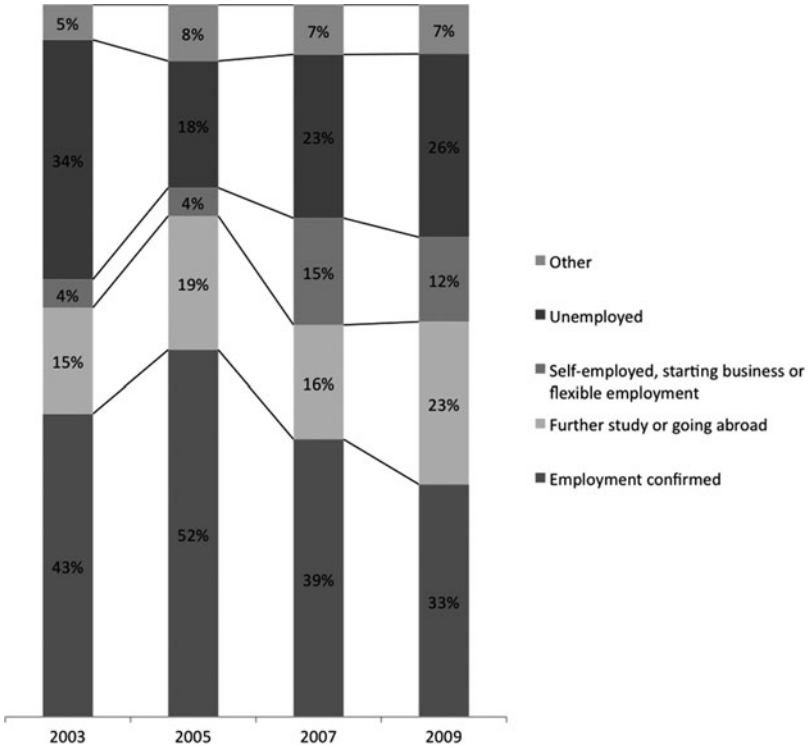
### 1. Changes in Post-Graduation Choices

The survey data indicate that the paths taken by Chinese college students after graduation became increasingly diverse between 2003 and 2009 (see Figure 2). The specific changes can be summarized in the four points described subsequently.

First, there was a marked decline in the proportion of graduates successfully signing employment contracts with an employer. Graduates who had started college in China's enrollment expansion year of 1999 entered the labor market in 2003. That year, only 43% of college graduates successfully signed employment contracts or had confirmed



Figure 2. Paths taken after graduation, 2003–2009



employment. This proportion rose to 52% in 2005 but then declined in 2007 and, by 2009, only one-third of college graduates were able to successfully enter the job market.

Second, the proportion of graduates failing to find employment in their chosen career showed a weak growth trend. Such unemployed graduates comprised 34% of all graduates in 2003. The trend greatly improved afterward, dropping to 18% in 2005, but in 2007 it began to move upward again.

Third, the proportion of graduates choosing nontraditional employment grew rapidly. Against a backdrop of increasing competition for employment, a pattern emerged after 2005 of rapid growth in graduates choosing self-employment, starting businesses, flexible employment, or other nontraditional employment. Their overall proportion reached

15% in 2007 and 12% in 2009. This new trend in college graduate employment is worth watching in the future.

Fourth, in the post-expanded enrollment era, further study in China or abroad has become an important choice for college students after graduation. The research points out that, with increased competition in the labor market, college graduates presently choosing graduate study are primarily motivated to enhance their education level, strengthen their competitiveness in the job market, and temporarily circumvent the risks of employment (Bao and Zhang 2009). The survey data used in this study indicated that 23% of 2009 graduates chose to attend graduate school, move on from a polytechnic college to a four-year university, or study abroad.

## ***2. Characteristics of Graduates on Different Paths after Graduation***

Table 1 is a statistical description of the types of graduates taking four different broad employment paths. We were able to use the table to summarize the characteristics of these graduate groups.

First, about 13% of graduates successfully signing contracts and finding employment in the labor market were enrolled in “985” project institutions. Students from polytechnic colleges comprised 23.4% of this employed group, significantly higher than those from such institutions choosing further education. Graduates in the traditional employment group were more satisfied with the institutions they attended than those in nontraditional employment group or the unemployed group. In terms of individual characteristics within the employed group, men were predominant, their socioeconomic status was significantly higher than that of the unemployed population, and they were more interested in their discipline and had better academic performance than the unemployed group.

Second, the socioeconomic status of graduates giving up employment for continued studies either in China or abroad was significantly higher than other groups, regardless of the selectivity of the school they attended. One fourth of this group graduated from “985” schools, primarily undergraduate institutions. In addition, the satisfaction of this group with the institution they attended was significantly higher than that of other graduates. The group going on for further studies had a distinct advantage in terms of family socioeconomic status and academics; about 70% of these students had a strong interest in the discipline they studied.

Table 1

Statistical Description of Graduates on Different Paths after Graduation

		Traditional employment	Further studies	Nontraditional employment	Unemployed
Institution type		13.0	25.3	2.8	3.4
Satisfaction with institution	985 institutions (%)	23.4	8.6	38.3	25.2
	Polytechnic institutions (%)	3.56	3.59	3.52	3.27
	Student rating (average)				
	Institutional characteristics				
Gender	Male (%)	61.1	52.2	58.0	50.2
Place of origin	City (%)	30.8	37.0	33.2	25.5
Parents' education level	Father's years of education (average)	10.1	10.9	10.3	9.4
Father's occupation	Disadvantaged group (%)	50.2	44.7	48.4	56.4
Family socioeconomic status (SES)	SES score	0.0023	0.1468	0.0035	-0.1612
Academic grades	Ranking in discipline (average)	3.06	3.34	3.03	3.01
Interested in discipline	Not interested in discipline (%)	32.3	30.7	38.4	37.5

*Note:* (1) Satisfaction with institution was measured by students' rating of their school on a 1–5 scale from lowest to highest; (2) disadvantaged groups in terms of father's occupation include those unemployed, those in agriculture, forestry, animal husbandry and fisheries, and industrial workers; and (3) SES score calculation method: family income and parents' education level and job prestige were standardized and then averaged.

Third, a minimal proportion of graduates from “985” institutions chose self-employment, starting a business or other nontraditional employment. Most students making that choice graduated from institutions with low selectivity, including 38% from polytechnic colleges. Although fewer graduates chose nontraditional employment than further studies, they still had certain advantages in terms of socioeconomic status compared with the group choosing traditional employment and the unemployed group. These students’ academic performance was relatively worse, however, and about 38% of them were not interested in the discipline they studied; this ratio was even higher than that of the unemployed group.

Finally, only 3.4% of the group ending up unemployed upon graduation were from “985” institutions; more than one fourth of this group came from polytechnic colleges, and they had the lowest satisfaction with the institution they attended. The highest proportion of the unemployed group came from rural areas, and their family socioeconomic status was at a significant disadvantage. In addition, it is most noteworthy that students in this group had the lowest academic performance among all graduates, and more than 37% of them lacked interest in the discipline they studied.

### ***3. Mechanisms Affecting Graduates’ Employment Path***

A statistical analysis of the characteristics of these four groups of graduates reveals that there is a certain correlation between the path graduates take and the characteristics of the institution they attend, as well as their own individual characteristics. Here, based on the analytical framework of this study, we used a multivariate logistic regression model for further analysis and testing to estimate the impact on graduates’ choices of four factors, including their own individual characteristics, institutional characteristics, the characteristics of the labor market in their location and the macroeconomic development context. We must specially note here that, when placing labor market variables into the model, we had to account for the data set being pooled data. To control for the impact of changes over time on the relevant indicators, we standardized the indicators for labor market characteristics. In addition, when examining the effect of the macro context, to examine the impact of the financial crisis on college graduates after 2008, we placed a dummy variable for the 2009 survey year into the analytical model (2009 survey year = 1, other survey years = 0).

For the analysis, we made “unemployed” graduates the reference group, with a standardized coefficient of zero. The regression coefficient in the logistic regression model reflects the effect of each independent variable on the logarithm for the probability of the dependent variable. The odds ratio  $\text{Exp}(B)$  indicates the change in the original odds ratio caused by each unit change in the independent variable. The results of the multivariate logistic model estimation are seen in Table 2. We can see that the logarithmic likelihood of the model is 1.071 E5 and the overall model test is significant, indicating that the model is a good fit.

First, in terms of individual characteristics, when compared with the baseline reference group of unemployed graduates and controlling for other variables, students who are male, have urban residence status and excellent grades, and are interested in their disciplines have a higher probability of successfully signing contracts and becoming employed after graduation.

In addition, family socioeconomic status has a significant impact on the employment of graduates. Compared to the unemployed population, the higher the father’s occupational status and level of education, the greater the propensity of college graduates to become successfully employed. In terms of the institutional characteristics of the colleges and universities attended by graduates, the analysis showed that each unit increase in the institution’s selectivity and quality of education increased the probability of successful employment 1.545 times and 1.271 times, respectively. In terms of discipline, compared to the reference group (science, agriculture, and medicine), graduates in engineering and the social sciences had a greater probability of successful employment, while the probability of employment for graduates in the humanities was 14.4% lower than that of the reference group. Looking at labor market characteristics, the higher the socioeconomic development level of their location, the higher the likelihood of graduates’ successful employment. We also found, however, a negative relationship between the successful employment of college graduates and the level of tertiary industry development in their location, while the relationship was positive with the unemployment level in the urban labor market. It is noteworthy that, according to our findings, the global financial crisis had a significant impact on the employment of Chinese college graduates. In 2009, the probability of successful employment for college graduates decreased 42.5% compared to before the crisis.

Table 2

**Analysis of Factors Affecting Graduates' Employment Path (Multivariate Logistic Regression Analysis Results)**

	Traditional employment		Further studies		Nontraditional employment	
	Coefficient B	Exp (B)	Coefficient B	Exp (B)	Coefficient B	Exp (B)
<b>Individual student characteristics</b>						
Male (dummy variable)	0.348***	1.417	0.120***	1.128	0.424***	1.529
Urban origin (dummy variable)	0.159***	1.172	0.291***	1.338	0.255***	1.291
Grade ranking in discipline	0.115***	1.122	0.651***	1.918	0.049**	1.050
Interest in discipline (dummy variable)	0.129***	1.138	0.151***	1.163	-0.111***	0.895
Father's years of education	0.035***	1.036	0.082***	1.085	0.047***	1.048
Father's occupation disadvantaged group (dummy variable)	-0.103***	0.902	-0.164***	0.849	-0.165***	0.848
<b>Institutional characteristics</b>						

(Continued)

Table 2 Continued

	Traditional employment		Further studies		Nontraditional employment	
	Coefficient B	Exp (B)	Coefficient B	Exp (B)	Coefficient B	Exp (B)
Selectivity of institution	0.435***	1.545	0.967***	2.631	-0.216***	0.806
Humanities	-0.155***	.856	-0.721***	0.486	-0.008	0.992
Social sciences	0.168***	1.183	-0.656***	0.519	0.239***	1.270
Engineering	0.633***	1.883	-0.284***	0.753	0.085*	1.089
Quality of education (student satisfaction)	0.240***	1.271	0.153***	1.165	0.209***	1.232
Labor market characteristics						
Per-capita gross domestic product (standard score)	0.563***	1.756	0.669***	1.953	0.192***	1.212
Proportion of tertiary industries (standard score)	-0.141***	0.869	-0.321***	0.726	-0.260***	0.771
Registered urban unemployment rate (standard score)	0.205***	1.228	0.005	1.005	-0.041	0.960
Macro context						
Financial crisis (dummy variable)	-0.553***	0.575	0.082**	1.086	0.347***	1.414
-2 logarithmic likelihood value			1.071 E5			
Chi-square test value of model			1.2376 E4***			
Degrees of freedom			45			

Note: The baseline reference group is the unemployed; the reference disciplines are science, agriculture, and medicine. Significance levels: \*0.1, \*\*0.05, \*\*\*0.01.

Second, our analysis showed that students with outstanding grades, a strong interest in their discipline, urban residence status and higher family socioeconomic status were more likely to choose to continue their studies. With each unit increase in the institution's selectivity and teaching quality, the probability of graduates choosing further studies increased 163.1% and 16.5%, respectively. In terms of the impact of the labor market, graduates from regions with a higher level of economic development but lower level of tertiary industries had a greater tendency to choose further studies. In terms of overall supply and demand in regional labor markets, the urban unemployment rate had no significant effect on choosing further studies. In addition, our research showed that the financial crisis to a certain extent stimulated an increase in graduates choosing to continue their studies.

Finally, looking at factors influencing the choice of nontraditional employment, when compared to the unemployed group, male students with urban resident status and higher family socioeconomic status were more likely to choose nontraditional employment, such as starting a business, self-employment, or flexible employment. The significant negative interaction between this choice by graduates and their interest in their discipline is worth more in-depth consideration. In contrast with those choosing further studies, the effect of the selectivity of the institution is negative. Specifically, with each unit increase in the institution's academic selectivity and teaching quality, the probability of graduates choosing nontraditional employment decreased 19.4%. In addition, the results indicate that the financial crisis led to a significant increase in the probability of students choosing a nontraditional employment path after graduation.

#### ***4. Effect of Different Time Periods and Factors on Graduate Employment***

The above analysis shows that the path students take after graduating is subject to restraint by the macro socioeconomic development environment and, to a great extent, by factors on three different dimensions: graduates' own individual characteristics, the characteristics of the institutions they attend, and the characteristics of the labor market in their location. Subsequently we focus on the two post-graduation routes of employment and unemployment, and examine the changing impact of the characteristics of individual job seekers, colleges and universities, and labor markets over the range of survey years.



Figure 3. Effect of different years and factors on graduate employment

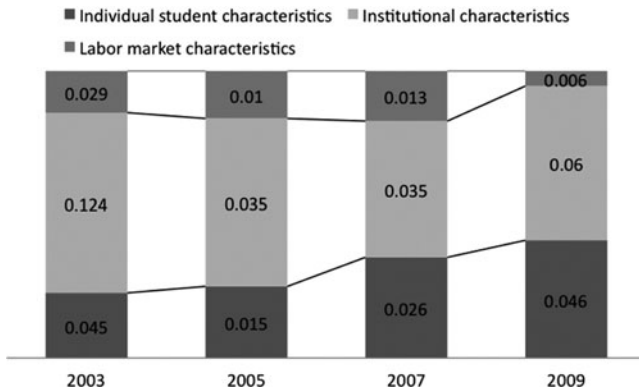


Figure 3 contains a binary logistic regression model using stepwise regression. As the variables of individual student characteristics, institutional characteristics and labor market characteristics are successively added, we see cumulative changes in the coefficient of determination for our model reflecting the mechanisms impacting graduate unemployment in different years. We note here that, unlike a linear regression analysis model, the logistic regression model does not provide a coefficient of determination. For this study, we therefore attempted to use the Cox and Snell Pseudo  $R^2$  to interpret the linear regression model  $R^2$  based on the likelihood value, in order to consider the explanatory power of the different factors mentioned previously for college graduate unemployment in the years addressed.

In Figure 3 we can clearly see that, although the explanatory power in different years varies, they collectively indicate that the primary factor impacting graduate unemployment is institutional characteristics, followed by the individual characteristics of job seekers. In contrast, the weakest effect is on the demand side, labor market characteristics. Another aspect requiring our attention is that the explanatory power of the individual characteristics of job seekers, including socioeconomic status, was 0.045 in the analytical model for 2003. It declined significantly in following years, but in 2009 the impact of this factor rose again and exceeded the 2003 level. We took a cautious approach to directly comparing the results for each year due to the limitations of the data sample and the statistical methods, but this phenomenon raises

an important issue worth exploring in depth. As the competition for jobs further intensified in the wake of the financial crisis, resources owned by individuals (capital) may have played an even more decisive role in access to employment.

## V. Conclusions and Recommendations

At the turn of the 21st century, China's rapid expansion of higher education enrollment resulted in a surge in the number of college graduates, but lagging industrial restructuring and technological upgrades led to a stagnation in the capacity of employers to absorb the emerging educated labor force. The combination of the above factors resulted in increasingly serious problems in college graduate employment. For this study, we used data from the National Survey of College Graduates from 2003 to 2009 to conduct an empirical study of changing trends in, and the mechanisms affecting, the paths taken by college students after graduation. Based on our research, we come to the following primary conclusions.

1. With increased competition for jobs and the added impact of the financial crisis, students choose to take diverse paths after graduation. In recent years, there has been a downward trend in the proportion of college graduates successfully entering the job market. At the same time, however, graduates have taken other important routes, including further studies and nontraditional employment such as starting a business and self-employment; the combined proportion of these two groups was 35% in 2009.
2. More than one-fourth of college graduates end up unemployed after graduation. We found that the proportion of this group appears to be on the rise again in recent years. Meanwhile, in contrast to those employed and going on to further education, primary causative factors like being female and from a rural area, and having inadequate family socioeconomic status and cultural capital accumulation increase the probability of being unemployed. If the institution attended lacks sufficient selectivity, teaching quality or education level, this factor to a certain extent inhibits the possibility of a student's successful employment. In addition, students' lack of interest in their academic discipline and poor grades are also important factors resulting in their unemployment.
3. The successful employment of college graduates is closely correlated with regional labor market characteristics, and China's domestic

tertiary industry structure has failed to effectively develop its capacity for employment absorption. Enhanced regional socioeconomic development will effectively promote the successful employment or further study of college graduates. On the other hand, our research found the opposite of the positive correlation between tertiary industry development and college graduate employment found in related research in developed countries. In China's labor market for college graduates, a negative correlation is seen between tertiary industry development and employment. To explain this phenomenon, we need to re-examine China's tertiary industry development model and continually advancing urbanization process. Related research findings indicate that, due to accelerating urbanization in China in recent years, the large-scale influx of rural migrants into cities and towns has reached 220 million people. About 71% of the migrants enter tertiary industries, and 83% of those employed in tertiary industries work in traditional services such as wholesale, retail, hospitality and household services. Meanwhile, a very low proportion are modern service industries such as finance, insurance, and high technology (Zhang 2010). This means that, due to the low-end structure of China's tertiary industries, they primarily absorb a work force of rural migrants, who represent lower labor costs and human capital investment. China's tertiary industries, with traditional service industries as their mainstay, have not provided effective support for absorbing college graduates.

4. The path students choose after graduating is influenced by multifaceted factors, including their own individual characteristics, features of the institutions they attend, and labor market conditions, as well as the macro socioeconomic development environment. Compared to other factors, institutional characteristics have greater significance to successful employment after graduation.

This research provides important insights for future policy improvements concerning the employment of college graduates in China.

1. The government and institutions of higher education should give adequate attention to the diversifying paths taken by graduates, particularly those choosing nontraditional employment. How to improve their quality of employment and ensure their professional development is a new topic for future employment promotion policies.
2. To address the characteristics impacting unemployed college graduates, college career guidance departments need to engage in targeted

- guidance and support aimed at female students, those from rural areas and poorer families, and those with weak academic performance and interest in their studies.
3. Colleges and universities need to fully develop their important role in promoting the successful employment of their graduates, in particular actively enhancing teaching quality and academic selectivity to provide effective support for their graduates' successful entry into the labor market.
  4. Promoting the employment of college graduates cannot rely solely on government policy-making authorities and institutions of higher education. We must also promote the continuing development of China's labor market. Changing the current extensive, low-end development model and upgrading and optimizing the tertiary industrial structure is an important prerequisite for improving the capacity of the labor market to absorb college graduates.

Finally, we must point out that there remain certain limitations to this study and room for further research in the future. An accurate and comprehensive examination of the career paths of college students after graduation will require, on the one hand, refinement of the study design and, on the other, a follow-up survey of college graduates to collect relevant data and conduct in-depth and systematic research. At the same time, in terms of methodology it is necessary to introduce multilinear models and other methods for the appropriate in-depth analysis and interpretation of multilevel, nested data.

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