

# The Incidence and Influencing Factors of College Student Term-time Working in China

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*As the labor market pressure for college graduates keeps rising in the past decade, working while attending college becomes increasingly popular among undergraduate students in China. With a nationally representative dataset of 6,977 students from 49 institutions, this study examines the incidence and influencing factors on undergraduate student term-time working in four-year universities and colleges in China. Overall, the paper finds that: 1) 63% of undergraduate students work for about 23 hours per week in academic semesters for an average of 5.7 months in college; 2) student term-time working pattern (i.e. participation, length, and intensity) differs across forms of work, and varies by types of institution; 3) students' non-academic ability, financial constraint, and institutional environment jointly influence the participation and intensity of term-time working. The findings provide implications to policies regarding financial and developmental support to undergraduate students.*

## Introduction

After 18 years of rapid expansion, the Chinese higher education system has become the largest in the world, with more than 41.4 million students in over 2,800 institutions in the year of 2015.<sup>1</sup> Along with the enrollment expansion is the changing environment faced by college students. Before the reform of higher education in 1999, the cost of attending college was kept low through government subsidies, and college graduates were like “hotcakes” on the job market. As the expansion went on, a significant number of students from low-income families entered college. At the same time, tuition and fees charged by higher education institution (HEIs) increased significantly (Bai, 2006; Yu, 2010). Though the Chinese Ministry of Education (MoE) carried out new financial aid policies aiming at providing sufficient financial support to all low-income college students, the forms of financial aid had changed from mostly grants and scholarships to a combination of grants, scholarships, work-study compensations, and subsidized student loans (Yu, 2010). As the number of college graduates started to increase since 2003, the job market competition kept leveling up. According to a bi-annual national survey, the first employment rate of

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<sup>1</sup> Source: [http://www.moe.edu.cn/s78/A03/moe\\_560/jytjsj\\_2015/2015\\_qg/201610/t20161011\\_284371.html](http://www.moe.edu.cn/s78/A03/moe_560/jytjsj_2015/2015_qg/201610/t20161011_284371.html)

bachelor degree holders decreased from 75.7% in the year of 2003 to 68.7% in the year of 2011(Yue, 2012).<sup>2</sup>

Under these circumstances, more and more undergraduate students actively seek work opportunities while enrolled in college. Though there are no official statistics from the MoE, this trend is documented by empirical studies in various regions in China. The percentage of students who worked during college has increased from about 20-30% in surveys conducted in 1999 (e.g., Li, 2000; Jun Li & Ma, 1999) to about 60-80% in recent datasets (e.g. Du, 2015; Ren, Guo, & Pan, 2013; B. Zhao & Qiao, 2014). In addition, the China College Student Survey (CCSS) 2016, a national-wide survey of 38 four-year colleges and universities, shows 64% of students have working experience during academic terms. Working while enrolled in college has become a prevalent activity among Chinese undergraduate students.

This raises an increasingly hot debate on the influence of student working. The proponents suggest that working provides students with both monetary compensations and opportunities to gain practical and social experience (e.g. G. Li, Zhao, & Huang, 2007; Tang & Wang, 2007; Wang, 2000, etc.). But the opponents argue working during academic terms reduces the time for studying, but provides little meaningful practical training because most of the jobs are low-skilled and labor-intensive ones (Chu, Yang, & Ma, 2010; Jiaheng Li, 2007; L. Li et al., 2011; Qian, 2011; Wang & Li, 2008; Zhao & Hao, 2010; Zhu, Li, & Xu, 2009). Though there is, so far, no consensus on whether term-time working is beneficial to students, it is suggested that at least off-campus intensive work (i.e., more than 20 hours per week) during term time is harmful to student academic performance (Furr, Elling, & Furr, 2000; Lundberg, 2004; Umbach, Padgett, & Pascarella, 2010; Wu & Zhong, 2012).

For HEIs to form up relevant policies regarding student working, it is necessary to understand the current situation and identify influencing factors of student term-time working. Specifically, this study examines two questions:

1. What is the incidence and characteristics of undergraduate student term-time working in four-year HEIs in China?
2. What are the factors influencing undergraduate students' term-time working decisions?

The first question is answered with a descriptive analysis of a nationally representative dataset. The second is answered by multiple regression analysis based on a comprehensive conceptual framework. The analysis is limited to four-year universities and colleges because three-year (vocational) colleges in China place a higher emphasis on

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<sup>2</sup> The first employment rate refers to the percentage of college graduates who are offered a job or admitted to graduate schools by June 30th.

practical training, and student experience may be systematically different from that in four-year HEIs. The study provides an opportunity to understand students' college experience and financial need from a non-academic angle. The findings of this study will help HEIs better support college student development. It will also provide policy makers with evidence for the reform of higher education tuition and financial aid policies.

The key term, "term-time working" is defined as taking paid jobs during academic semesters. There are three general forms of paid jobs taken by students during term time in China. The first is on-campus work-study jobs provided by institutions. This is part of the financial aid system to support low-income students. Therefore, there is an income requirement to be eligible for work-study positions. The positions are usually labor intensive, such as librarians, student assistants, and so forth. The wages vary by positions and institutions but usually are just above the minimum wage standard.

The second form is part-time jobs offered by employers outside one's institution. These jobs are usually temporary and uncontracted positions. Most jobs are labor-intensive, such as sales man, waiters/waitresses, and so forth; a few are knowledge-intensive, such as private tutors, designers, language interpreters, and so forth. Job locations and wages vary by the nature of jobs. There is usually no institutional requirement or restriction on taking part-time jobs. Students have the freedom to decide whether and how much to work.

The third form of work occurs as internships. To differentiate from the second form, internships in this study refer to formally contracted positions related to students' academic majors and career development. Most HEIs require students to take internships before graduation. Some even have agreements with employers to arrange internships for students. But most institution-arranged internships are unpaid and take place during the summer breaks or in the last semester of college. Therefore, they are not included in this study. What is included is paid internships obtained through personal channels. Most of these jobs are off-campus and require the full-time attendance of several work days.

As summarized in Table 1, the three forms of term-time work have different features with regards to the job nature, location, eligibility requirement, flexibility of schedule, and wage level. Students who take any of the three forms of jobs during term time are referred to as "term-time working students". In the rest of the paper, I first review previous studies in China, then present a theoretical framework on determinants of student term-time working decision, discuss the method and data, describe the results, and finally conclude with a discussion on the findings.

**Table 1. Characteristics of Different Forms of Term-time Work**

	<b>Work-study Jobs</b>	<b>Part-time Jobs</b>	<b>Internships</b>
<b>Formal/informal</b>	Formal	Usually informal	Usually formal
<b>Type of job</b>	Labor-intensive	Varies, but mostly labor-intensive	Mostly knowledge intensive
<b>Location</b>	On-campus	Mostly off-campus	Mostly off-campus
<b>Eligibility</b>	Low-income students	No	No
<b>Schedule</b>	No full-time attendance requirement; Flexible schedule.	Varies; but usually no full-time attendance requirement; Flexible schedule.	Usually require full-time attendance of several working days
<b>Wage level</b>	Relatively low	Varies	Varies

### **Literature Review**

Previous empirical studies provide some evidence on the situation of in-college working in China based on institutional student surveys. They summarize the characteristics of jobs, attitudes and motives of working students, and students' perceptions on gains and losses from working. With regards to the influencing factors of student term-time working, only a few studies have conducted examinations with regression analysis. Using data on marketing majored students in an HEI, Jing, Lv, and Sun (2010) find that parental attitudes towards part-time working and whether taking student leadership positions in college were positively correlated with the part-time working decision. Zhao & Qiao (2014) use a dataset of 6 HEIs in Jiangsu Province and find that students' gender, grade, family income, financial aid, and origins were all significantly correlated with their part-time working decisions. Other studies summarize the reasons and motives for students to work. They find that the primary two reasons are to gain social and work experience and to earn monetary compensation (Cheng & Wang, 2010; Chu et al., 2010; Deng, Zhang, Yang, Pang, & Xiao, 2004; Du, 2015; Jing, Wu, & Zhao, 2005; Jiaheng Li, 2007; Li, 2011; Li & Ni, 2006; Ma, 2012; Qian, 2011; Wang, 2010; Yuan, Ren, & Ouyang, 2009; Zhang & Wu, 2008; Zhao & Hao, 2010; Zhu et al., 2009). Other incentives for part-time work include to spend spare time, to make friends, and to follow what other students do (Chu et al., 2010; Jing et al., 2005; Li et al., 2011; Ma, 2012; Wang, 2010; Zhang & Wu, 2008). These findings imply that students' financial need, eagerness to improve labor market competitiveness, time constraints, and peers' influence may be additional factors influencing decisions for term-time working.

There are some knowledge gaps in the current Chinese literature. First, most previous studies are descriptive summaries of survey questions. The two studies using regression analysis only examine the influence of a few factors. There is still a need to examine the influencing factors based on a comprehensive theoretical framework. Second, previous studies are based on data collected from a single or a limited number of institutions. Few studies use regional data (T. Li, 2011; B. Zhao & Qiao, 2014). National data has not been used. It is necessary to learn about the situation of college student term-time working

nationally. Third, few studies have explicitly distinguished between working during term time and during summer and winter breaks. Under different time constraints in the academic semester and on breaks, students' incentives to work, gain working experience, and benefits from working may all be different. There are two recent studies focusing on jobs taking in academic semesters, but only concentrated on part-time jobs (Du, 2015; B. Zhao & Qiao, 2014). This paper attempts to fill the knowledge gaps with quantitative analysis on a nationally representative dataset.

### Theoretical Framework

Students' decision on whether and how much to work in academic terms is in the nature of the allocation of time for studying and working. The decision process can be modeled with the Human Capital theory which describes individuals' time allocation between schooling and work. The classical model (Becker, 1993; Mincer, 1974) divides individuals' lifetime into two periods: a period of full-time schooling and a period of full-time work in the labor market. People decide the length of the first period to maximize their lifetime income. Scott-Clayton (2012) suggests two circumstances in which people may choose to work part-time in a schooling period. The first is when there is a credit constraint and individuals cannot borrow enough to pay for college. Working during term time is the only way for them to continue schooling. The second is when students expect valuable human capital gains from term-time working. Assuming a diminishing rate of return to time spent on a specific activity (i.e., study/work), students would benefit from allocating time on more than one activity.

Combining the two circumstances, Scott-Clayton (2012) proposes an empirical model to describe students' time allocation decision:

$$w_1(a) + \beta r^w \frac{\partial g(h_w; a, Q^w)}{\partial h_w} = \beta r^s \frac{\partial f(h_s; a, Q^s)}{\partial h_s} \quad (1)$$

where functions  $g()$  and  $f()$  are the production functions of work- and school-related human capital. The accumulated human capital from a specific activity is determined by the amount of time spent on that activity ( $h_s$  and  $h_w$ ), individual's innate ability ( $a$ ), and the quality of that activity ( $Q^s$  and  $Q^w$ ).  $r^w$  and  $r^s$  represent the rates of return to work- and school-related human capital in the labor market.  $\beta$  represents the market and personal discount rate. The left-hand side of Equation (1) represents the marginal benefit of one additional hour on working. It equals to the current income return to that additional hour (i.e.,  $w_1(a)$ ) plus the present value of future income returns to work-related human capital gained from that additional hour (i.e.,  $\beta^* r^w * \frac{\partial g(h_w; a, Q^w)}{\partial h_w}$ ). The right-hand side of the equation represents the marginal benefit of one additional hour on studying, which is the present value of future income returns to school-related human capital gained from that hour. Assuming that  $\frac{\partial g}{\partial h_w}$  and  $\frac{\partial f}{\partial h_s}$  are decreasing and that  $r^w$  is not equal to  $r^s$ , rational students would stop spending more hours on term-time working when the marginal

benefit of spending an additional hour on working equals to the marginal benefit of spending that hour on studying.

This equation suggests four categories of factors that may influence students' term-time working decisions. The first is related to students' financial constraint while attending college. The income from term-time working represented by  $w_1(a)$  can be considered as the monetary opportunity cost for students to spend an additional hour on studying. Assuming zero present value of future income returns to term-time working, a student will not work if the opportunity cost is affordable; or in other words, if he/she is not under a financial constraint while attending college. Students' financial constraint is determined by the cost and expenses of attending college (i.e., tuition and fees, basic living expenses, and other consumptions to maintain a certain lifestyle, etc.) and the amount of available funding from sources other than personal work income (i.e., personal savings, family/parents support, grants/scholarships, loans, etc.). From this vein, students' term-time working decision would be influenced by institutional characteristics that determine the direct cost of attending college and the amount of financial aid, and by family background that influence the amount of parental support and expected consumption level.

The second category is related to students' inclination to work. As shown in Equation 1, students may spend more time on working if they perceive more gaining from term-time jobs than school courses. The production functions  $g()$  and  $f()$  suggest that students' attitudes towards study and work, innate ability, education quality provided by institution, and the quality of work experience may all influence students' term-time working decision.

The third category is the local labor market condition that determines work opportunities available to college students during term time. The amount, types, and wage level of jobs influence both the income from term-time working (i.e.,  $w_1(a)$ ) and the potential human capital gains.

In summary, from the lens of Human Capital theory, college students' term-time working decision may be influenced by personal ability and attitude, family background, institutional characteristics, and jobs available during term time. This model is supported by previous empirical studies in the U.S. (DesJardins, McCall, Ott, & Kim, 2010; Kalenkoski & Pabilonia, 2008; Titus, 2010) as well as studies in China summarized in the last section.

## **Methodology**

*Data and sample* The data used in this paper is from the College Student Labor Market Survey (CSLM) conducted by Tsinghua University in the year of 2011.<sup>3</sup> The CSLM is an

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<sup>3</sup> The CSLM survey is also called "Follow-up Survey of College Graduates in China".

annual survey on undergraduate students who are graduating in the year of the survey. It collects information on individual characteristics, family background, pre-college experience, college activities, and financial situation during college, working experiences during college, and placement after graduation. The questionnaires are distributed in late May and June, about one month before the commencement in most Chinese universities.

In 2011, the Tsinghua survey team constructed a national representative sample with a multi-stage random sampling strategy. First, the team randomly sampled HEIs by geographic region (Municipalities (i.e., Beijing, Shanghai, and Tianjin), Northeast area, East area, Central area, and West area) and by institution type (Project 985 and Project 211 HEIs (the elite HEIs), public non-elite four-year HEIs, vocational (three-year) colleges, and independent (private) colleges).<sup>4</sup> Second, in each HEI, about 200 to 400 students in the graduating class were randomly drawn based on their student ID. In all, 8,179 students in 50 institutions participated in the 2011 survey. The average responding rate was about 74%.

As this study focused on students in four-year HEIs, the only vocational college with 180 students was dropped. Furthermore, the sample was restricted to students in Cohort 2007 (i.e., students entered college in 2007) to eliminate cohort-level differences. The final analytic sample contained 6,977 students in 49 institutions. Among the institutions, 13 were from the three municipalities, 5 from the northeastern region, 8 from the eastern region, 11 from the central region, and 12 from the western region. With regards to institution types, there were 8 universities in the Project 985, another 16 universities in the Project 211, 23 non-elite public HEIs, and 2 independent colleges. The Tsinghua survey team purposefully over-sampled the elite universities. But they provided sampling weights based on the sampling scheme to ensure national representativeness of the data.

**Empirical Models** Based on the theoretical framework, I constructed the following empirical models to examine factors influencing student term-time working participation and intensity:

$$\Pr(W_i=1) = \alpha_0 + \alpha_1 \text{Fin}_i + \alpha_2 \text{Ind}_i + \alpha_3 \text{Edu}_i + \alpha_4 \text{Job}_i + \alpha_5 X_i + \varepsilon_i \quad \text{Model (1)}$$

$$\text{Hour}_i = \beta_0 + \beta_1 \text{Fin}_i + \beta_2 \text{Ind}_i + \beta_3 \text{Edu}_i + \beta_4 \text{Job}_i + \beta_5 X_i + \varepsilon_i \quad \text{Model (2)}$$

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<sup>4</sup> The Project 985 and Project 211 were launched by the Chinese Minister of Education in late 1990s to promote the building of world-class universities in China. The Project 211 consisted of 112 universities, 39 of which were selected to the Project 985. All of these universities were research universities awarding bachelor and above level of degrees. They received additional financial support from the central government. Though the two projects were terminated by MoE in 2016, the 112 universities are still considered to be the elite universities in China, and those in the Project 985 are considered to be the best. For more information, please refer to <http://www.chinaeducenter.com/en/cedu/ceduproject211.php>. Independent colleges are financed and operated by the private sector but affiliated to a public university. They only offer associate and bachelor degrees. The tuition charged by independent colleges is higher than the public institutions.

The dependent variable in Model (1),  $W_i$ , indicates whether the student participated in term-time working (i.e., the participation). The dependent variable in Model (2),  $Hour_i$ , is the number of hours spent on working per week (i.e., the intensity).  $Fin_i$ ,  $Ind_i$ ,  $Edu_i$ , and  $Job_i$  represent financial constraint, individual attitude and ability, education quality, and term-time labor market conditions respectively.  $X_i$  is the demographic covariates including gender, age, ethnicity, and academic major.

The key explanatory variables are the four categories of influencing factors suggested by the theoretical framework. They are measured with available information in the CSLM survey. Table 2 presents the measures/indices of the factors, along with the descriptive statistics. To be noted, there is no direct measure of labor market conditions during term time in the CSLM data. The models use the regions of institution, location of campus, and the percentage of low-SES students in the institution as indirect measures of job availability. In addition, the popularity of term-time working in the institution (i.e., the percentage of term-time working students)<sup>5</sup> is included as an index of the overall institutional environment to working students.

Model 1 is estimated with Probit regression<sup>6</sup> on the entire analytic sample, and Model 2 with Ordinal Least Square (OLS) regression on the sample of working students. In addition, observations with a value above the 97.5 percentile of intensity are excluded when estimating Model (2) to eliminate the influence of outliers. Sampling weights are applied in all regressions to maintain national representativeness. Standard errors are clustered at institutional level to adjust for the nested data structure. Missing values in explanatory variables are treated with the Dummy Flag method.

As a check of multi-collinearity between explanatory variables, I first examine the Pearson's correlation coefficients between explanatory variables (not presented in paper because of page limitation). Overall, most of the correlation coefficients are below .3. But the correlations between the amount and type of financial aid and between whether from rural area and SES score are relatively high ( $r = .685$  and  $-.619$  respectively). I then examine the Variation Inflation Factor (VIF) after regressions. The VIFs of all individual variables, including the pairs of variables with relatively high correlations, are below 5. The overall VIFs of the models are below 2. In sum, the analysis suggests that the multi-collinearity between explanatory variables is not severe. The CSLM data is cross-sectional but not longitudinal, meaning, the regression coefficients only represent the associations between the factors and student term-time working, but not the causal impacts of the factors.

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<sup>5</sup> To rule out the possibility of reverse causation, the percentage of term-time working students is calculated based on the larger sample, i.e. the sample with students in both Cohort 2007 and other cohorts (sample size=8,179).

<sup>6</sup> Probit regression is a way to estimate models with binary dependent variable using the standard maximum likelihood procedure. The error term is assumed to follow the standard normal distribution.



**Table 2. Descriptive Statistics of Explanatory Variables**

Factor	Measure / Index	M (SD)	Missing rate (%)
<b>Category 1: Financial constraint</b>			
<b>Financial burden</b>	Ratio of tuition to household income	0.23 (0.23)	18.26
<b>Funding</b>	Total financial aid (in RMB)	2266.73 (2409.46)	3.55
	Family fund (in RMB)	9412.62 (5826.81)	18.55
<b>Source of funding</b>	Had merit aid (Yes=1) (%)	34.13	0
	Had need aid (Yes=1) (%)	21.09	0
	Had loan (Yes=1) (%)	27.92	2.85
<b>Family background</b>	Single child (Yes=1) (%)	36.38	1.10
	Rural (Yes=1) (%)	43.15	0.32
	SES score (constructed)	-0.15 (0.97)	22.33
<b>Category 2: Individual ability and attitude</b>			
Academic ability	NCEE score (rescaled to 1~100)	70.41 (7.88)	12.05
Non-academic ability	Student leader in high school (Yes=1) (%)	41.62	0
Attitude on work	Ever worked in high school (Yes=1) (%)	3.05	0
Attitude on studying	Attitude towards major (%)	2.67 (0.80)	2.52
<b>Category 3: Education quality</b>			
HEI Type (%)	Project 985 HEIs	6.65	0
	Project 211 HEIs <sup>a</sup>	12.28	
	Public non-elite HEIs	69.72	
	Independent colleges	11.44	
HEI concentration	Comprehensive HEIs (%)	22.18	0
	Engineering-concentrated HEIs (%)	43.34	0
	HEIs in other concentrations (%)	34.48	
<b>Category 4: Term-time labor market conditions</b>			
HEI environment	% of term-time working students	0.59 (0.15)	0
	% of low-income students	0.24 (0.11)	0
HEI location (%)	Municipalities	14.48	0
	East	41.70	
	Central/West	44.82	
Campus location (%)	Urban	66.66	0
	Suburban	33.34	
<b>Covariates: Demographic background</b>			
Age	Age	22.99 (1.00)	2.11
Gender	Female=1 (%)	47.27	0.46
Race	Minority=1 (%)	5.25	0.95
Major	STEM majors (%)	54.61	0.21
	Economic & business major (%)	16.94	
	Other majors (%)	28.24	

Note: Sample size=6,977; sampling weights applied. Institutions in both the “985” & “211” Projects are not included in this category.

## **Empirical Results**

***Incidence and Pattern of Term-time Working*** The nationally representative CSLM 2011 data shows that 62.7% of undergraduate students in China's four-year colleges and universities have term-time working experience. As presented in Table 3, by the time of graduation, they on average have accumulated a total of 5.7-month work experience during academic semesters. This is about one month longer than a regular academic semester in China. When students participate in term-time working, they, on average, work for about 22.7 hours per week, which can be considered a heavy workload according to the U.S. studies.

With regards to the forms of work, the participating rate in work-study jobs, part-time jobs, and internships is 19.98%, 35.05%, and 36.73% respectively. In addition, about 28.60% of working students have taken two forms of work, and about 9% have taken all three forms. The participating pattern varies across work forms. As shown in Table 3, students taking work-study jobs work for a relatively longer period (5.6 months) but less intensively (13.0 hours per week). Those taking internships work more intensively (31.8 hours per week) but for a shorter period (3.0 months). The data also reveals a trend of change in work forms as students go into senior grades. About 76% of work-study jobs and 65% of part-time jobs are taken in the first two years, and about 79% of internships are taken in the last two years. As internships are more demanding and major-relevant than work-study and part-time jobs, such a trend implies a shift from low-skilled to high-skilled jobs as students enter their final years in college.

The incidence and pattern of term-time working varies across the types of HEIs. As shown in Table 3, the overall participating rate is lower in elite universities than in public non-elite universities, and it is lowest in independent colleges. Yet the overall average length and intensity do not differ much across types. Specifically, elite universities have a higher participating rate in work-study jobs than non-elite universities (23% vs. 19%). Students in elite universities work for a longer time (about 7 months vs. less than 5 months) but slightly less intensively (about 10-13 hours per week vs. 13.5-14 hours per week) than those in non-elite universities when taking work-study jobs. Public non-elite HEIs have the highest participating rate in part-time jobs and internships (about 40% vs. less than 34% in others for both), as well as the highest length and intensity of part-time jobs (4.7 months vs. fewer than 4 months in others; 18 hours per week vs. no more than 17 hours per week in others). Independent colleges have the lowest participating rate in part-time jobs and internships (14.8% and 26.0% respectively). Yet comparing to those taking the same form of work in other institutions, students in independent colleges work for the longest time when taking internships (3.2 months), and work most intensively when having work-study jobs (14 hours per week).

**Table 3. Undergraduate Students' Term-time Working Participation in China**

	Overall	Work-study	Part-time job	Internships
<b>Whole sample</b>				
Incidence (%)	62.74	19.98	35.05	36.73
Length ( <i>M/SD</i> )	5.67 (5.91)	5.57 (6.01)	4.45 (5.36)	2.95 (2.66)
Intensity ( <i>M/SD</i> )	22.71 (15.53)	13.01 (12.23)	17.71 (14.82)	31.80 (15.65)
<b>Project 985 HEIs</b>				
Incidence (%)	60.29	23.39	33.12	29.52
Length ( <i>M/SD</i> )	5.73 (6.42)	7.07 (7.37)	3.94 (5.85)	2.34 (2.25)
Intensity ( <i>M/SD</i> )	20.6 (15.09)	12.85 (12.98)	16.74 (14.77)	31.15 (14.65)
<b>Project 211 HEIs</b>				
Incidence (%)	59.99	24.35	32.41	30.39
Length ( <i>M/SD</i> )	6.19 (6.76)	7.35 (7.66)	3.90 (4.89)	3.07 (3.06)
Intensity ( <i>M/SD</i> )	20.36 (15.41)	10.29 (11.08)	15.69 (14.48)	31.54 (15.25)
<b>Public non-elite HEIs</b>				
Incidence (%)	65.99	19.02	39.02	40.29
Length ( <i>M/SD</i> )	5.71 (5.85)	5.20 (5.55)	4.66 (5.51)	2.94 (2.60)
Intensity ( <i>M/SD</i> )	23.46 (15.50)	13.48 (12.66)	18.14 (14.95)	32.36 (15.47)
<b>Independent colleges</b>				
Incidence (%)	47.31	19.16	14.8	25.98
Length ( <i>M/SD</i> )	4.57 (4.52)	4.23 (3.94)	2.94 (2.46)	3.24 (2.95)
Intensity ( <i>M/SD</i> )	21.10 (15.84)	14.04 (10.00)	17.09 (13.46)	26.53 (18.12)
<b>Incidence by HEI concentration (%)</b>				
Comprehensive	62.5	19.91	34.61	36.03
Engineering	52.55	15.47	27.76	28.07
Other concentration	75.71	25.69	44.49	48.07
<b>Incidence by region (%)</b>				
Municipality	62.06	14.99	29.59	41.85
East	71.49	22.22	40.6	37.33
Central & West	71.69	19.52	47.02	34.49
<b>Incidence by campus location (%)</b>				
Urban area	64.04	21.52	37.59	36.43
Suburban	60.14	16.9	29.98	37.32

Note: Sample size=6,977; Sampling weights applied.

The incidence of term-time working also varies by institution's disciplinary concentrations and locations.<sup>7</sup> Engineering institutions have a lower participating rate than comprehensive universities in all three forms of work, while institutions with other concentrations have more. With regards to location, institutions in municipalities have the lowest overall participating rate, but the highest internship participating rate. Institutions in urban areas have a higher participating rate in work-study and part-time jobs than institutions in suburban areas.

<sup>7</sup> There is no clear difference across institution concentrations and locations with regards to the length and intensity. Therefore, the descriptive statistics are not reported in this section for page limitation.

To examine factors influencing students' participation and intensity of different forms of term-time working, Model 1 and Model 2 are estimated on overall term-time working, work-study jobs, part-time jobs, and internships respectively.<sup>8</sup> Results are presented in Table 4.

**Financial constraint.** As shown in Columns (1) to (4) in the table, students' term-time working participation is strongly correlated with the financial constraint measures. First, holding other things constant, the financial burden of attending college measured by the ratio of tuition to household income is statistically significantly and positively associated with the likelihood to participate in term-time working. But the significant association is only found for work-study jobs. Second, having need-based aid is statistically significantly associated with a higher likelihood to take work-study jobs. Having loans is positively associated with a higher likelihood to participate in all three forms of work. Third, students from rural area and low-SES families are statistically more likely than other students to take work-study jobs. Students with siblings participate significantly more in part-time jobs and internships. The other variables, including the amount of family funding, the amount of financial aid, and having merit aid have no significant associations with the participation in any form of term-time working. The financial constraint measures, however, have limited influence on the intensity of term-time working. As shown in Columns (6) and (8), the intensity of work-study jobs and internships is not correlated with any of the measures. The intensity of part-time jobs is positively associated to having need-based aid, but negatively associated to family SES score and being from rural area.

**Individual characteristics.** The results show that students' academic ability measured by standardized NCEE score is significantly, negatively associated with overall probability and intensity of term-time working, but their non-academic ability (measured by being a student leader in senior high school) is positively associated with participation in all three forms of work, though association with work intensity is not statistically significant. Students' attitude toward working shows no significant correlation with the participation and intensity of working in college. But their attitude towards their academic major is found to be significantly associated with the participation in part-time jobs (negative) and the length of work-study jobs (positive). The results also show that female, older, and Han students are more likely to take part-time jobs during term time. Female students are also more likely to take internships and work more intensively than males. Students in STEM majors are overall less likely to work, but they work more intensively in internships. Students in economics and business majors also work more intensively in internships.

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<sup>8</sup> A caveat is that, when examining the participation in different forms of term-time work, I do not intent to model the choice between the forms for three reasons: 1) students may take more than one form of work, and about 36% of students in the CSLM 2011 sample did so; 2) the choices do not satisfy the Independence of Irrelevant Alternatives (IIA) assumption; 3) not all students are exposed to the same set of choices (for instance, work-study positions is only available to eligible students). The assumptions of multinomial analysis are therefore not satisfied.

**Table 4. Regression Estimates on Influencing Factors of Term-time Working.**

	Participation				Intensity			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Overall M.E. (s.e.)	Work-study M.E. (s.e.)	Part-time M.E. (s.e.)	Internship M.E. (s.e.)	Overall b (s.e.)	Work-study b (s.e.)	Part-time b (s.e.)	Internship b (s.e.)
<b>Financial constraint</b>								
Tuition as % of income	0.10* (0.041)	0.12* (0.056)	0.0063 (0.047)	-0.044 (0.050)	-1.11 (1.16)	-0.28 (1.12)	-2.09 (2.54)	2.21 (2.49)
Total family funding (log)	0.0052 (0.018)	-0.0098 (0.017)	-0.0091 (0.017)	-0.0064 (0.013)	0.79 (0.83)	0.18 (0.58)	1.22 (0.90)	0.16 (0.71)
Total financial aid (log)	0.012*** (0.0029)	0.0067 (0.0047)	0.0094 (0.0053)	0.012 (0.0091)	-0.13 (0.16)	-0.37 (0.30)	-0.39 (0.24)	0.041 (0.25)
Has merit aid	0.0074 (0.018)	0.028 (0.016)	0.0080 (0.021)	-0.019 (0.034)	-0.084 (1.10)	1.00 (1.28)	0.25 (0.96)	0.43 (2.37)
Has need aid	0.014 (0.035)	0.075** (0.029)	0.021 (0.030)	-0.028 (0.057)	0.23 (0.85)	1.67 (1.30)	3.98** (1.18)	1.04 (0.89)
Has loan	0.085*** (0.019)	0.086*** (0.014)	0.092*** (0.021)	0.049* (0.024)	-2.21* (0.88)	-0.76 (0.52)	-1.73 (1.17)	-1.68 (1.04)
Rural	0.065** (0.024)	0.043* (0.020)	0.041 (0.030)	-0.0024 (0.039)	-1.06 (0.64)	-0.18 (1.21)	-2.07* (1.00)	1.06 (0.71)
SES score	0.0016 (0.016)	-0.030** (0.0094)	-0.030 (0.016)	0.016 (0.015)	0.23 (0.37)	0.21 (0.55)	-1.36* (0.59)	-0.53 (0.63)
Single child	-0.088*** (0.017)	-0.0037 (0.016)	-0.082*** (0.024)	-0.075** (0.023)	-0.24 (0.85)	1.38 (1.75)	-1.52 (1.36)	1.14 (1.34)
<b>Individual ability and attitude</b>								
NCEE score (std.)	-0.039*** (0.011)	-0.0016 (0.011)	-0.016 (0.010)	-0.050*** (0.014)	-0.86* (0.35)	-0.31 (0.37)	-0.63 (0.56)	0.31 (0.45)
HS student leader	0.032* (0.016)	0.063*** (0.015)	0.030* (0.013)	0.034** (0.013)	-0.60 (0.67)	-0.33 (0.68)	0.12 (0.95)	-0.68 (0.93)
Worked in HS	-0.054 (0.049)	-0.024 (0.033)	-0.031 (0.056)	-0.043 (0.042)	-0.99 (1.67)	-0.70 (2.41)	2.22 (2.55)	-3.04 (3.30)

*Incidence and Influencing Factors of College Student Term-time Working*

Attitude on major	-0.018 (0.0097)	0.0029 (0.0065)	-0.026** (0.0094)	-0.011 (0.014)	-0.14 (0.34)	1.33** (0.46)	-0.85 (0.43)	-0.40 (0.46)
<b>Institutional characteristics</b>								
Inst. Type (ref.: public non-elite HEIs)								
Project 985	-0.043* (0.021)	0.059 (0.050)	-0.066* (0.030)	-0.075** (0.027)	-2.21* (0.86)	-2.10 (1.31)	-2.24* (1.09)	-0.92 (1.60)
Project 211	0.0052 (0.019)	0.13*** (0.032)	0.0096 (0.023)	-0.060* (0.029)	-4.15*** (0.93)	-3.44** (1.03)	-4.80*** (0.98)	-1.66 (1.26)
Independent college	-0.033 (0.034)	0.043 (0.071)	-0.21*** (0.039)	0.012 (0.075)	0.30 (1.37)	2.00 (1.50)	2.41** (0.85)	-5.20** (1.62)
Inst. Concentration (ref.: HEIs in other concentration)								
Comprehensive HEI	-0.0049 (0.023)	0.0018 (0.032)	0.049 (0.026)	-0.018 (0.039)	0.63 (0.72)	1.63 (1.05)	1.62* (0.71)	-0.029 (1.14)
HEI in engineering	-0.048* (0.024)	-0.011 (0.029)	0.020 (0.027)	-0.072 (0.041)	-0.61 (0.97)	-0.74 (1.29)	0.62 (0.88)	0.16 (1.28)
% of term-time working students	0.0066*** -0.00057	0.0035*** (0.00094)	0.0062*** (0.0011)	0.0041***	0.0075 (0.029)	0.035 (0.045)	-0.019 (0.025)	0.14** (0.045)
% of low-SES students	-0.0023 (0.0012)	-0.0034*** (0.0010)	-0.0066** (0.0024)	0.00079 (0.0017)	0.18*** (0.041)	0.0011 (0.032)	0.18*** (0.028)	-0.055 (0.045)
Inst. Location (ref.: HEIs in East region)								
HEIs in Municipalities	-0.0058 (0.026)	-0.083** (0.026)	-0.058 (0.044)	0.100* (0.050)	5.87*** (1.03)	1.88 (1.28)	6.27*** (0.93)	1.41 (1.56)
HEIs in Central/West	-0.061*** (0.015)	-0.073** (0.023)	0.018 (0.023)	-0.022 (0.036)	1.43 (0.73)	2.77** (0.85)	1.61* (0.63)	2.28* (0.95)
Suburban campus vs. urban	-0.026 (0.015)	-0.032 (0.019)	-0.098*** (0.027)	0.052 (0.028)	2.66*** (0.72)	0.47 (0.99)	2.38*** (0.62)	1.01 (1.14)
<b>Covariates</b>								
Age	0.013* (0.0066)	0.010 (0.0070)	0.042* (0.018)	-0.0038 (0.011)	-0.50 (0.56)	0.19 (0.63)	-0.71 (0.54)	0.36 (0.84)
Female	0.086*** (0.016)	-0.0057 (0.027)	0.11*** (0.018)	0.039* (0.018)	0.52 (0.64)	-0.35 (0.96)	0.82 (0.86)	2.20* (0.88)

Minority	-0.077**	-0.030	-0.091**	-0.051	0.63	3.09	1.29	-0.14
	(0.026)	(0.024)	(0.031)	(0.034)	(1.81)	(1.78)	(1.60)	(2.73)
Stem major	-0.060*	0.0082	-0.046	-0.085	-0.63	-0.99	-1.29	4.53*
	(0.030)	(0.024)	(0.026)	(0.050)	(0.85)	(1.16)	(0.83)	(1.69)
Econ & business major	-0.032	0.030	-0.054	0.031	3.51**	-0.12	1.41	6.73***
	(0.036)	(0.027)	(0.038)	(0.046)	(1.12)	(1.54)	(1.33)	(1.71)
No. of obs.	6262	6251	6251	6251	3693	1185	1893	1889
F					129.6	138.2	110.1	116.8
R-squared <sup>a</sup>	0.17	0.12	0.13	0.079	0.085	0.11	0.085	0.080

Note: 1) M.E. stands for marginal effects of Probit models; 2) Sampling weights applied and standard errors clustered at institution level; 3) Robust errors are in parentheses; 4) Missing dummies included in all regressions; 5) \* p<0.05, \*\* p<0.01, \*\*\* p<0.001. a. Pseudo R-squared for Probit regressions.

***Institutional characteristics.*** As shown by the descriptive results in previous section, the incidence and pattern of term-time working varies across institution types. The regressions reveal that, after controlling for students' financial constraint and personal factors, institutional characteristics still have strong associations with students' term-time working behavior.

First, institution type is significantly associated with the likelihood and intensity of individual students to work during term time. Comparing with public non-elite HEIs, attending elite universities is in general associated with a lower likelihood to take part-time jobs and internships, but a higher likelihood to take work-study jobs. It is also associated with fewer hours spent on working per week in general.

Second, institution location still matters. Comparing to the east region, attending HEIs in municipalities is significantly associated with a higher probability of taking term-time internship, more intensive participation in part-time jobs, but a lower probability to take work-study jobs. Attending HEIs in the central and west region is also associated with a lower probability of taking work-study jobs. But students in these institutions work significantly more intensively than those in the east region in all three forms of term-time jobs. In addition, studying in suburban campuses is associated with a significantly lower probability of taking part-time jobs. But when having the jobs, students in suburban campuses work more intensively than those in urban campuses.

Third, the regressions reveal institutional environments are significantly associated with term-time working participation. The prevalence of term-time working is positively associated with individuals' likelihood of participation in all three forms of term-time working. Specifically, the marginal effect is largest in the model for part-time jobs, indicating that students' participating in part-time jobs is more likely to be influenced by peers than their participating in work-study and internships. As for the percentage of low-income students on campus, it is surprising to find that the percentage is negatively associated with individual students' participation in work-study and part-time jobs. Assumedly, HEIs with more low-income students should have a higher percentage of working students. A possible explanation is that the competition for such jobs might be more severe in HEIs with higher percentages of low-income students, and therefore it is more difficult for students to obtain jobs.

Overall, the regression analyses reveal students' participating in term-time working are significantly associated with individual financial constraints, personal abilities, and institutional characteristics. However, the intensity of work is hardly associated with individual level factors, and varies mainly by institution characteristics.

### **Conclusions and Discussion**

Using a nationally representative dataset collected through the CSLM 2011 survey, this study finds that about 62.7% of students in four-year universities and colleges in China



have working experiences during academic semesters. Students participate in term-time working for less than half a year, on average, throughout college, but work intensively when having a job (23 hours per week on average).

Comparing to the literature on college students working in China, students in this study work more intensively during term time. Previous studies found that students worked for less than 10 hours per week (Bao, Tao, Jiang, Wang, & Qi, 2010; Chen, Zhang, Ye, & Sun, 2005; Qian, 2011). A possible reason for this difference might be that, previous studies did not specifically distinguish students' grade in college, while the CSLM sample contained only those in the graduating class. As students in the first two years in college have relatively heavier course load than those in the third and fourth year, they may not be able to spend too much time to work. Previous studies did reveal a trend of increasing intensity as students getting into senior years (Chen et al., 2005; Jun Li & Ma, 1999; L. Zhang, 2009; B. Zhao & Qiao, 2014; R. Zhao & Hao, 2010; Zhou & Chen, 2010). A similar trend is found in this study as well. The average number of hours spent on working per week is 14, 16.7, 20.6, and 24.8, respectively, in the first through fourth year in college. However, even in early years in college, students in this sample still spend more time per week on working than those in previous studies.

With regards to the forms of term-time working, the data shows that internships and part-time jobs are more popular than work-study jobs. This may be partly due to the fact that work-study positions are only available to low-income students. In addition, about one-third of working students in the CSLM sample take more than one form of work. This confirms the finding of Jing, Lv, and Sun (2010) that many working students have multiple working experiences. The data also indicates a trend of a shift from work-study and part-time jobs to internships as students go into senior grades. This is consistent with Chu et al. (2010) which finds that students in the junior and senior years are more likely to take high-skilled and major-relevant jobs than those in lower grades. As for the participating pattern, the findings suggest that work-study jobs last longer than part-time jobs and internships, while internships are more intensive than the other two forms of work. This partly explains the trend of increasing work intensity through grades.

The multiple regression analyses finds that only three variables have consistently shown significant coefficients in all participation models: that is, having loans for college, being student leaders in high school, and institutional prevalence of term-time working. This suggests that heavy financial burden, non-academic ability, and peer effects are the three major factors influencing students' decision on whether to work during term time. This finding is consistent with the theoretical hypotheses and previous studies. However, for

those who are involved in term-time working, the work intensity is hardly influenced by individual characteristics, especially for the intensity of work-study jobs and internships. Work-study jobs and internships are formal positions provided by institutions (i.e., HEIs and companies) rather than individuals. Therefore, students have relatively less bargaining power in determining the work intensity.

Furthermore, the findings on individual level factors suggest that it is the internally perceived financial pressure rather than the real shortage of funding that incentivizes students to work during term time. Evidence comes from three aspects. First, taking loans for college, as well as being eligible for need-based financial aid and work-study positions, indicates a lack of funding from personal sources. However, there is no direct evidence on the negative association between participation in term-time working and the total amount of family funding and financial aid. Secondly, the likelihood to participate in part-time jobs and internships is higher for students with siblings than for the “single child”, but the likelihood of taking work-study jobs is not. Having siblings does not necessarily mean insufficient funding from parents in absolute amount—it does not make students more eligible for work-study positions. But it does imply less-than-full parental support, and therefore increases students’ willingness to work for money on their own. Thirdly, it is found that females and students of older ages are more likely to participate in part-time work than their counterparts, but not more likely to take work-study jobs. This could be explained from the same vein that females and older students may perceive less funding from parents, or they are not willing to rely on parents for college. Another possible explanation is that these students may have higher consumption levels. Yet the pressure to maintain a self-chosen consumption level is also internally-imposed (Scott-Clayton, 2012).

As for institutional factors, the descriptive and regression analyses find that institution type, location, and environment are significantly associated with students’ term-time working behaviors, even after controlling for individual level factors. But the association differs across forms of jobs. To interpret the findings, we need to take into account the nature of jobs, institutional characteristics, and student motives of working. As described in earlier sections, work-study jobs and most part-time jobs are similar in nature: they both are low-skilled and labor-intensive. The primary reason for students to take such jobs is to earn monetary compensations. Yet work-study positions are provided by institutions. Elite universities, with adequate funding from central and provincial governments, usually have well-designed work-study programs to support students’ need of working. By contrast, public non-elite HEIs, which have less funding but a higher percentage of low-SES students, may not be able to provide sufficient work-study opportunities to

students in need. In this case, students who cannot obtain jobs on campus have to turn to off-campus part-time jobs for alternatives.

The participation in internships is another story. Students take internships in preparation for future work. As suggested by the theoretical framework, students in non-elite universities may perceive lower educational quality, and therefore participated more in internships. Yet an alternative explanation is that students' participation in internship is influenced by their graduation plan. In the CSLM sample, about 40% of students in Project 985 HEIs and 33% in Project 211 HEIs do not plan to enter the labor market after college, whereas nearly 80% of students in non-elite universities plan to work directly. It is reasonable that students in elite universities participate less in internships than those in non-elite universities. However, the graduation plan and internship participation are endogenous decisions: students' internship experience may alter their graduation plan. This cross-sectional dataset does not allow for a test on which this explanation is more plausible.

This paper contributes to the current literature in two ways: First, it provides a nation-level record on the incidence and status of term-time working in Chinese universities and colleges. Second, it examines the influencing factors of students' term-time working participation and intensity based on a comprehensive conceptual framework. The representativeness of the dataset makes the findings generalizable to most four-year HEIs in China. In addition, there are several limitations in this study. First, the CSLM is a retrospective cross-sectional survey. Besides the above-mentioned inability to make causal inference on the regression coefficients, the data collection method also raises a potential problem of measurement error in variables regarding pre-college experience and experience in the early years in college. Secondly, the measure of some factors, such as student ability, attitude, and education quality, might be inadequate with the current data. There is also a lack of information on some other important factors suggested by the theoretical framework, such as job and labor market characteristics during term time. The R-squared of the regression models are relatively small, suggesting that important factors influencing college students term-time working behaviors are omitted. Future studies could use longitudinal data in combination with multiple data sources to better model students' decision process. Qualitative studies may also be helpful in finding the other driving factors of student term-time working.

In summary, this study finds that students' term-time working behavior is jointly influenced by individual factors including perceived financial constraint and non-academic ability, and institutional environment including peer effects, institution quality,

and job availability. From policy perspective, the findings suggest that HEIs need take more responsibility to provide support and guidance to working students. Though the impact of term-time working on college outcomes is still under debate, many studies using quasi-experimental designs find significant negative impacts of term-time working hours on GPA (Dadgar, 2012; DeSimone, 2008; Kalenkoski & Pabilonia, 2008; Stinebrickner & Stinebrickner, 2003; Wenz & Yu, 2010). Intensive off-campus working is found to be especially detrimental (Furr et al., 2000; Lundberg, 2004; Umbach et al., 2010; Wu & Zhong, 2012). From this point, HEIs should improve and expand the institutional work-study program to retain students on campus. They should also offer students with guidance on how to balance study and work, how to choose high-quality jobs, and what to expect from term-time working. With regards to financial aid policies, it shows that taking loans distracts students from studying. Previous studies also find that loans negatively influence students' academic achievement (Huang, Yang, & Li, 2016). From this vein, HEIs should give more attention and academic support to student loan-takers. In addition, not only HEIs but also the whole higher education system needs to consider providing more scholarship, grants, and subsidies to students rather than loans.

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