

Flexible but segmented labour markets: the case of student mini-jobs in Slovenia

Janez Šušteršič, Tanja Kosi, Bojan Nastav

University of Primorska, Faculty of Management Koper, Slovenia

Abstract

The article is the first analysis of student work in Slovenia based on a sample of individual-level data rather than a survey. The first part presents aggregated data on the extent and cost of student work, comparing them to relevant labour market aggregates and considering the competitiveness of students in the labour market. The second part provides statistical tests of the common assumption that working students, due to their preferential tax and regulatory treatment, crowd out some other groups of job seekers from the labour market. It is shown that student work has a statistically significant and quantitatively non-negligible positive impact on the rate of youth unemployment (under the age of 30), especially on the unskilled segment. However, there is no evidence on its impact on the unemployment of young graduates.

Key words: student work, regulation, labour market, youth, unskilled workers, graduates

JEL: J08, J21, J42, J44

1. Introduction

Most students in Slovenia work. According to the Labor Force Survey (SORS¹, LFS 2008), 82 percent of students younger than 24 years took on occasional jobs in the first quarter of 2008. Another survey (Eurostudent SI 2008) estimated this share at 65 per cent and reported that students spent a third of their active time working rather than studying. According to the Ministry of Labour data, the total amount of students' earnings increased by 60.7 percent from 2005 to 2008.

¹ Statistical Office of the Republic of Slovenia.

Both students who take up part-time or occasional jobs and their employees enjoy considerable fiscal and regulatory allowances. These allowances, initially introduced with the aim of giving students a chance to sustain themselves while studying and to gain some valuable work experience, have come under severe critique in recent years. Ignjatovič and Trbanc (2009, 44) claim that excessive student work negatively affects academic success. Moreover, being both a cheaper and a more flexible labour force, working students crowd out young graduates from the labour market.

Existing discussions are based on scarce survey data and anecdotic evidence and the arguments are not supported by formal statistical tests. This article fills the gap by providing statistical tests of the assertion that students crowd-out particular groups from employment. It is the first study of this issue to use micro-level data provided by one of many student employment agencies². The data are aggregated into monthly measures of student activity and used in a series of regressions estimating determinants of various unemployment measures. We find some evidence for the crowding-out hypothesis, but, surprisingly, not for the group of presumably most affected young graduates.

In the next section, we briefly introduce the specific legal framework of student work in Slovenia. We continue by presenting some overall data on the extent and cost of student work, comparing them to relevant labour market aggregates and considering the competitiveness of students in the labour market. In the fourth section, we statistically test the hypothesis that student work crowds out from the labour market other modes of employment with higher fiscal burdens and stricter employment regulations.

2. Legal framework

In Slovenia, the term »student work« refers to the work of university and high-school students under 26 years of age, performed on the basis of student work referrals (a slip of paper which serves as a proof of employment and as a report of student's work) through student employment agencies.³ Student work is essentially designed to be performed in the form of part-time and occasional jobs and is not supposed to have the characteristics of full-time employment. In this form, student work should neither have a negative impact on the study process (i.e. the students' focus should still be on their own studies) nor on the labour market (specifically on the labour market prospects of young graduates). At the same time, student work is supposed to enable young people who are still studying to gain valuable work experience and to cover part of their study-related costs. This is probably the main reason for the numerous fiscal and regulatory allowances enjoyed by the student work in comparison with other forms of employment.

² There are currently 48 temporary employment agencies who are specialised in student work.

³ The work performed by high school students accounts for approximately 30 percent of all the students' work. Our article is limited to the work of university students and its impact on the labour market.

High-school and university students are not liable to social security contributions. Neither do they have to pay income tax, if their income does not exceed the statutory special allowance for income from student work. However, the amount of students' earnings reduces their parents' eligibility to certain social transfers, such as child allowances. Since 2007, the tax allowance for student work has been equated with the personal income tax allowance, which means it was reduced by no less than 45 percent. Prior to calculation of the tax base, 10 percent lump-sum expenditures are deducted from the amount on the student work referral. Taking all these into account, the actual amount of non-taxable annual student income in 2009 was 3,390 euro.^{4,5}

The main fiscal charge levied on student work is the concession fee charged by the student employment agency to the company, which hires the student. The general concession fee amounts to 12 percent of the net income paid. At present, this amount is distributed between the Slovene Human Resources Development and Scholarship Fund, which takes 25 percent of the total amount, 37.5 percent is allocated to the Slovene Student Organisation and the same amount to the student employment agency for the compensation of expenses incurred. The State thus prescribes the amount of the recognised expenses or payment for the student employment agency in the effective amount of 4.5 percent of the student work net value despite the fact that there is considerable competition on the student work brokerage market (there were 48 concessionaires in 2009). Besides the general concession fee, there is also an additional concession fee in the amount of 2 percent of income paid destined to financing the construction of high school and university dormitories and to enhancing the study conditions at the universities.

Besides the concession, the student employment agency has to pay a monthly lump-sum health insurance contribution established by the Assembly of the Health Insurance Institute of Slovenia (HIIS). In addition, the income of student employment agencies (from the part of the concession to which they are entitled) covers also the contributions for pension and disability insurance. It is paid once a year for every student who works through the employment agency in the lump-sum amount established by the Assembly of the Pension and Disability Insurance Institute. Even though the amount of both contributions is increased every year, they are still low compared to the contributions paid on full-time workers' wages.⁶

⁴ As a comparison, the average monthly net salary in 2009 was 930 Euro.

⁵ Besides the special allowance for student work, the student is also eligible for the general personal income tax allowance, but this is only applicable when the student is under 26 years of age and is not registered as a dependant family member. However, since for the majority of university or high-school students one of the parents claims the tax allowance for dependants, we assume in our calculations of the tax burden on student income that students are not entitled to the general income tax allowance.

⁶ In 2009, the monthly health insurance contribution amounted to 4.27 Euros for each student who worked through the student employment service in that particular month. The annual pension insurance lump-sum was 8.79 per student.

3. Student work and the labour market

Prevalence of student work

For the purpose of our research, we employ three data sources. Besides official data from the Statistical register of working active population (SRWAP) and the Ministry of labour, family and social affairs (MLFSA), we also use individual-student level data, acquired from one of the leading student employment agencies in Slovenia (henceforth the agency). The agency provided us with two databases: the first comprises the aggregated data on total value and hours worked through the agency on a monthly basis broken down by high-school and university students, full- and part-time students, and schools/faculties. The second database comprises anonymous sample data at individual student payment level (i.e. each payment is recorded). For the period 2005-2008, the sample was constructed in the following way: in each of the four years, 1,500 students were randomly selected into the sample. Then, for each student included into the sample in whatever year, his or her payments throughout the period 2005-2008 were (additionally) brought into the database. Given the importance and the market share of the selected agency, we can speak in favour of satisfactory representative strength of the sample. While the market share of the agency in 2005 was below 20 percent, it was between 45 and 55 percent throughout the period 2006-2009.

Aggregated monthly data of the agency allow the insight into the level and structure of students' earnings for the period 2005-2009, and furthermore its breakdown by the status and the level of education⁷. Table 1 shows that estimated values of work via student employment agencies at the national level in 2008 was around 340 million euro. Given the presence of economic crisis, students earned around 6.4 per cent less in 2009 than in 2008. Between 2005 and 2008, the nominal value of student work grew on average at 17.1 per cent annually.

Table 1: Yearly figures of nominal value of high-school and university students' work with respect to their status in thousands of Euros

Year	Total	High-school students		University students		
		Full-time	Part-time	Full-time	Part-time	»Inactive« ¹
2005	211,249 (100%)	44,955 (21%)	351 (0%)	121,200 (57%)	26,965 (13%)	17,778 (8%)
2006	233,386 (100%)	43,463 (19%)	2,737 (1%)	147,600 (63%)	28,892 (12%)	10,694 (5%)
2007	256,355 (100%)	60,670 (24%)	9,781 (4%)	148,800 (58%)	35,524 (14%)	1,580 (1%)
2008	339,443	75,235	23,294	194,400	46,514	0

⁷ We obtained the monthly data on total net payments to students via the agency and on total hours of student work. Given the market share of the selected agency, we have aggregated the data of the selected agency to the national level. Thus, we have estimated the amount of total student work (in money terms and hours worked) in Slovenia in the studied period.

	(100%)	(22%)	(7%)	(57%)	(14%)	(0%)
2009	317,721	59,658	31,458	181,200	45,405	0
	(100%)	(19%)	(10%)	(57%)	(14%)	(0%)

Note: ¹ Inactive students are students who are enrolled in a certain year of study but do not have a student status due to exhausted rights for repeating the study year. Ever since 2007, inactive students have not been allowed to work through student employment agencies. .

Source: selected agency, own calculations

Next, we turn to show what these numbers mean in the context of the Slovene economy. The estimated monthly values of total student work on a national level have been “grossed-up” with the concession fee, with value-added tax (being levied on the concession fee), and with health-service contribution. In this manner, we were able to calculate the gross value of student work in each month.⁸ The sum of monthly gross values of student work in each year is shown in Table 2.

With the aim of comparing these figures to the national economy, Table 2 shows the data on the grossed-up value of gross wages for the studied period.⁹ The grossed-up value of gross wages is the value of gross wages paid to employees (i.e. the net or take-home wages plus employees’ income tax and social security contributions) increased by employers’ social security contributions (16.1 per cent of the gross wage) and the payroll tax. Based on the average gross wages, additionally grossed-up this way, and multiplying them with the number of working active population, we have calculated the total value of grossed-up gross wages. Using this as comparison (last column in Table 2), we calculated the share of the value of student work in the total work in Slovenia. It turns out that student work represents only a minor share in the total economy: only about 2 per cent. However, this share has been rising in the studied period, which is the consequence of both, rising average hourly payment and increasing total sum of hours worked via student agencies.

Table 2: Gross cost of student work and grossed-up value of gross wages in Euros for the period 2005-2008

Year	Gross cost of student work	Grossed-up value of wages paid	Share student work / total work
2005	243,598,477	13,612,849,727	1.79
2006	269,183,402	14,386,801,737	1.87
2007	302,200,599	15,677,065,410	1.93
2008	398,794,040	17,274,490,220	2.31

Source: selected agency, own calculations, SRWAP

In 2008, high-school and university students conducted nearly 75 million working hours. Average annual growth of hours worked in the 2005-2008 period was 9.4 per cent, which is

⁸ In years 2005 and 2006 the »grossing-up« amounted to 15.3 per cent of the (net) value of student work, in 2007 and 2008 this per cent was 17.7.

⁹ Year 2009 was elapsed since the complete and final data were not yet available.

significantly lower than the growth of the value of student work in the studied period. This points to the rise in average hourly wage for student work. In 2009, however, we observe 20 per cent drop in total hours worked with respect to previous year. The structure of total working hours with respect to student groups (i.e. high-school and university students and/or full- and part-time students) does not differ significantly from the structure of the total value of student work.

The number of monthly working hours for the average student is significantly lower than the number of working hours per the average employee. Therefore, the comparison of the scope of student work to employment in total economy shall not be based on the number of working persons in each group. A more appropriate approach to comparing student work to the total economy is by converting the hours worked into the full-time equivalents (FTE). *The number of students in full-time employment* is thus calculated by dividing the aggregated student-job hours in each month by the standard number of hours worked by a full-time employee in a given month. The number of full-time employments in Slovene economy has been calculated using the Labour Force Survey (LFS), where actual hours worked are measured. These hours are then transformed into FTE to obtain *the number of full-time employments in the economy*. Table 3 compares the number of students in full-time employment to the number of full-time employments in the economy. The calculations show that in the period 2005-2008 student work represented around 4 per cent of total hours worked in the economy. From the hours worked perspective the relative significance of student work is higher than from the value perspective, however we observe no (increasing) trend.

Table 3: Total hours worked for student and economy-wide work in the period 2005-2008

Year	Hours of student work	Hours of work in the economy	Percentage of student work in total economy's work
2005	56,991,995	1,460,413,310	3.90
2006	63,009,928	1,450,251,524	4.34
2007	63,122,170	1,685,151,369	3.75
2008	74,57,9491	1,735,178,243	4.30

Source: selected agency, own calculations, SORS (2009a)

Although the aggregate amount of student work (i.e. the amount of student work on the total economy level) is rather low, its significance has been increasing compared to other segments on the labour market. In Table 4, we present the share of the number of students in full-time employment in total active population and in active population of young (up to 30 years of age) persons. The latter comparison has been chosen deliberately, since working students tend to act as a substitute for persons belonging to the youth active population (which is also the basis for calculating the official youth unemployment rate).

Table 4: Comparison of student work with active population in percents

Year	Share of student work in active population	Share of student work in youth active population	Youth unemployment rate
2005	3.0	13.6	17.2
2006	3.3	15.6	15.3
2007	3.3	15.8	11.0
2008	3.8	18.5	8.7
2009	3.1	-	-

Source: selected agency, own calculations, SORS (2009a)

It is evident that the number of students in full-time employment represent an ever-increasing share in youth active population (a rise from 13.6 to 18.5 percent). The share of student work in youth active population is far from being negligible, especially when compared to youth unemployment rate (last column in Table 4). Namely, unemployed youth are the ones looking for jobs on the labour market and are often presumed to be most strongly affected by the competition from student work.

Competitiveness of student work

Based on the estimated data on gross payments to high-school and university students and the number of hours worked we have calculated the average gross hourly wage of student work. In Table 5, this is compared to the average gross hourly wage of (regularly) employed person in Slovenia. The average hourly gross wage has been calculated by additionally grossing-up the average monthly gross wage (by employers contributions in the amount of 16.1 per cent of the gross wage and by the average value of the payroll tax) and then dividing it by the number of hours worked in a given month (ranging from 160 to 184 hours). The other comparison in Table 5 refers to the minimum wage in Slovenia. Again, the gross minimum wage has been additionally grossed-up by employers' contributions and then divided by the monthly hours worked to obtain the average hourly minimum gross wage in Slovenia. The monthly values (the average monthly (minimum) gross wages) have been converted to the annual level using the weighted average of monthly figures, with hours worked in each month serving as weights for individual months.

Table 5 reveals that students can pose a strong competition on the labour market, as their average payment is only 55 per cent of the payment for the average-wage earner. On the other hand, we show that students are not cost-competitive with respect to minimum-wage earners. The latter finding partially results from the fact that students do not conduct (only) work, where no qualification is needed, and are thus paid above the minimum-wage level.

Table 5: Comparison of the average hourly gross wage of student work with the average and minimum hourly gross wages in the economy for the period 2005-2008

Comparing average hourly gross wages		
Year	Student work / employed	Student work / minimum wage
2005	53.1	128.1
2006	51.0	123.4
2007	54.4	135.4
2008	57.2	141.1

Source: selected agency, own calculations, SORS (2009a)

It is important to add that cost-competitiveness is not the only factor influencing the hiring decision of firms. There are other aspects that should also be taken into account. Student work can have a competitive advantage even though it is more expensive when compared to regular minimum-wage earners due to its flexibility. When employers need workers for a very short period, flexibility can prevail over the costs. On the other hand, student work can prove itself as rather uncompetitive (despite its cost-competitive advantage over average wage earners) when stability and long-term involvement of the employed are required. However, greater flexibility can be achieved also by other modes of employment, e.g. by working via contracts for a copyrighted work or special job contracts, payments to sole proprietors, borrowing workers from employment agencies, and short- or part-time employments. Some of these modes of work also help to partly avoid heavy taxes imposed on wages (paid on the grounds of regular employment contracts), which lowers the relative cost-competitive advantage of student work presented in Table 5.

Based on the analysis so far, we postulate the crowding-out hypothesis that student work poses a competition especially to:

- Unskilled workers, since student work represents an opportunity to employers to circumvent rigid employment protection legislation. Moreover, students tend to be more flexible with respect to working place and working time, which may altogether outweigh the higher costs of student work (compared to minimum-wage earners);
- Young people seeking their first job after finishing schooling. Here, the competition is mostly represented by students of higher years of study, who already possess certain skills and knowledge (e.g. IT and accounting, which are often demanded for in the student work ads).

In the next section, we test the crowding-out hypothesis by analysing the impact of student work on unemployment in different labour-market segments using the regression analysis.

4. Impact of student work on the labour market

The crowding-out hypothesis is valid, if we can find convincing evidence on statistically significant positive impact of student work on the unemployment rates. Besides the general unemployment rate (i.e. the unemployment rate for the whole active population), our analysis also includes unemployment rates for various labour market segments, that tend to be exposed to student work competition (the youth unemployment rate the unemployment rate of young graduates, the unskilled youth unemployment rate, and the unemployment rate of all unskilled).

In line with economic theory and empirical research, unemployment is affected by various variables reflecting the general economic situation. Considering this, our model includes control variables that measure economic activity (industrial production, construction industry activity) and (real) labour costs (gross wages, producers' prices). Since these variables are available at monthly level, we use monthly data for the student work as well (the number of students in full-time employment in the 2005-2008 period) thus obtaining 48 observations.

With several variables, we have come across the seasonal component. This occurred with the industrial production index, the construction output index, the average gross nominal wage, and the amount of student work. With the unemployment rates, we find no significant seasonal components, with the exception of the unemployment rate of young graduates. Where seasonal components were detected, they have been removed.¹⁰

The standard assumption of time series regression is the stationarity of variables, which is rarely fulfilled for variables from economic and financial fields. Applying the Dickey-Fuller unit-root test to our data detects non-stationary patterns (i.e. time-dependent means, variance or/and covariace) in the data. By applying usual methods (using first differences, using time series with excluded linear trend), non-stationarity could not be removed to a full degree and the regression model estimates on such variables were statistically insignificant and often illogical from the economic-theory point of view (especially illogical signs of coefficients of control variables). Stationarity could be reached by applying second differences, but the acquired model would be rather hard to meaningfully interpret. For that reason, we have decided to mitigate problems with non-stationarity by simply including additional regression

¹⁰ Since student work has a rather explicit seasonal component in summer months, which is stronger than seasonal component with the unemployment rates, the removal of seasonal components prior to running the regression analysis could have lead to underestimated correlation between the unemployment rate and the amount of student work. Therefore, we have decided to estimate the model(s) also by using the moving-averages technique. The size and the direction of correlations among studied variables do not differ significantly from figures presented in this paper (with the exception of control variable of industrial production, whose impact on the unemployment rate becomes negative, which is not a logical result from the economic-theory point of view). Expectedly, statistical significance of the estimated regression coefficients was improved. We have also estimated the version of the model with original (instead of deseasonized) data series,. However, the results were, again, similar to the results presented here, with the noticeable exception of the impact of gross wages, which becomes statistically significant and negative, which is, again, rather hard to interpret from the perspective of economic theory.

variable, t , being time in months. By doing so, we have excluded the impact of linear trend, which was present in all variables of unemployment rates and student work till the end of 2008, on other regression coefficients estimates.

Our regression model has the following form:

$$rU = \alpha + \beta * STUD(t) + \gamma * IPI(t) + \delta * AGW(t) + \zeta * CI(t) + \lambda * PPI(t) + \eta * t + \varepsilon(t) \quad (I)$$

$$STUD(t) = \mu + \kappa * IPI(t) + \theta * rU + \varphi * ITA + \chi * t + v(t), \quad (II)$$

where:

- rU – selected unemployment indicator (total unemployment rate, unskilled unemployment rate and various youth unemployment rates);
- $STUD$ – amount of student work measured in terms of the share of the number of students in full-time employment in selected active population (whole active, active unskilled or active youth);
- IPI – industrial production index (with 2005 average as a constant base);
- CI – construction output index (with 2005 average as a constant base);
- AGW – average gross nominal wage in Slovenia;
- PPI – producer price index (with constant base in January 2005);
- ITA – income tax allowance for student work, expressed in Euros per month. It has the role of an instrumental variable in the model (affecting student work but not being in direct correlation with unemployment and other explanatory variables in equation I);
- t – time dummy.

The estimated model consists of two simultaneous equations, which account for the fact that student work on one hand depends on economic activity and unemployment rate¹¹, whereas on the other hand it might influence the selected unemployment variables. Accordingly, we apply the two-stage least squared (2SLS) technique. In the first stage, we regress $STUD$ on the instrumental variable ITA ¹² and all other regressors (independent variables) in the system. In the second stage, we estimate equation I, where we use the estimated values of $STUD$ from the first stage. In the end, we have to make a correction to estimated standard errors of regression coefficients due to the presence of autocorrelation.¹³

When interpreting the results of this procedure, we have to bear in mind that estimates (estimators) from 2SLS procedure have good features (consistency, efficiency) on large samples while on small samples, such as ours, the quality of the estimates can be somewhat

¹¹ In times of relatively low level of unemployment rate, the demand for student work may increase to the extent that students can substitute for other labour.

¹² In our case, we have one endogenous variable and one instrumental variable. Therefore, parameters of the model are exactly identified. This means that we can use ordinary least squares (OLS) method to estimate the regression model and that using generalized method of moments (GMM) is not required.

¹³ To obtain autocorrelation robust standard errors, we employ Stata module ivreg28 (see Baum et al. 2007).

diminished. Although the estimator is consistent (or unbiased), it can be less efficient (it has a higher standard error or variability). Consistency of results also depends on the power of the instrumental variable, which varies across the five variants of the model (described below). Results shall therefore be interpreted with caution.

Table 6 shows the results of estimation of the regression model for five different unemployment rates:

- a) Unemployment rate of young people aged 30 years or less (youth unemployment rate), ***rUyouth***;
- b) Unemployment rate of young people aged 30 years or less with at least university first-level education (unemployment rate of young graduates), ***rUyouthG***;
- c) Unemployment rate of young people aged 30 years or less with at most elementary school (youth unskilled unemployment rate), ***rUyouthUN***;
- d) Unskilled unemployment rate (up to elementary school education level), ***rUunskilled***;
- e) General rate of unemployment, ***rU***.

Table 6: Results of regression analysis via 2SLS for five unemployment rates

	Explanatory variables	STUD_de*	AGW_de	CI_de	IPI_de	PPI	t	_cons
1	rUyouth	0.447717 (0.079)	0.000057 (0.42)	-0.000420 (0.005)	-0.000225 (0.281)	-0.002006 (0.107)	-0.001900 (0.001)	0.326002 (0.005)
		N=48, R2= 0.9416 (0.000)						
2	rUyouthUN	0.206122 (0.045)	0.000441 (0.096)	-0.001269 (0.014)	-0.001629 (0.039)	0.009792 (0.095)	-0.013213 (0.000)	-0.871683 (0.187)
		N=48, R2=0.9352 (0.000)						
3	rUyouthG_de	-0.015851 (0.544)	-0.000049 (0.291)	-0.000035 (0.700)	0.000010 (0.945)	-0.005472 (0.000)	0.001623 (0.000)	0.712040 (0.000)
		N=48, R2=0.8626 (0,000)						
4	rUunskilled	0.004281 (0.938)	0.000004 (0.809)	0.000004 (0.899)	-0.000116 (0.028)	-0.001100 (0.000)	0.000163 (0.234)	0.337581 (0.000)
		N=48, R2=0.7767 (0.000)						
5	rU	0.982884 (0.012)	0.000023 (0.294)	-0.000147 (0.001)	-0.000144 (0.032)	-0.001112 (0.005)	-0.000599 (0.000)	0.190957 (0.000)
		N=48, R2=0.9613 (0.000)						

Note: each row represents the results of the model for a different dependent variable (i.e. measure of unemployment). Columns present partial regression coefficients for explanatory variables with the corresponding P-values in brackets below each coefficient. For each version of the model (1-5), we state the number of observations (N), R-square (R2) and the corresponding P-value of the model in brackets.

* Share of student work (in full-time equivalent) in relevant active population:

- in active young population in regression 1;
- in active unskilled young population in regression 2;
- in active young graduates in regression 3;
- in active unskilled in regression 4;
- in total active population in regression 5.

Seasonal component has been removed in variable with _de.

Source: student employment agency sample, own calculations

The results of regression analysis for model 1 show that in the period 2005-2008 the relative amount of student work has a statistically significant positive effect on the youth unemployment rate. The value of the regression coefficient shows that the effect is rather strong: an increase in the share of student work (i.e. the number of students in full-time employment) in active young population by 1 percentage point (for year 2008 this would mean an increase from 18.5 to 19.5 per cent) leads to an increase of the youth unemployment rate by 0.45 percentage points. However, due to already mentioned restrictions, this quantitative interpretation shall be treated with caution.

The results of regression analysis for model 2 show that in the studied period the relative amount of student work has a statistically significant and positive effect on the unskilled youth unemployment rate. Again, the value of regression coefficient shows that the effect is rather strong: an increase in share of student work (in full-time equivalent) in active unskilled

young population by 1 percentage point leads to an increase of unemployment rate of unskilled young by 0.21 percentage points.

Regression analysis for a four-year studied period for model 3 does not reveal a statistically significant impact of the share of student work in young graduates on the unemployment rate of young graduates. The regression coefficient is negative, but the significance is high (0.544), which means that we cannot make a statement about this impact without risking too much. The reason behind this statistically insignificant impact might be the nature of work that students perform. From the data available (the sample from the selected agency) we estimate that nearly three quarters of all the student work represent physical and other less demanding work that require no special skills and knowledge, otherwise acquired by the graduates.¹⁴ Such student work does not crowd out the graduates from the labour market. Moreover, to students who are conducting more demanding work, this can bring about valuable experiences, further improving, not impairing, their employability.

While the estimation results confirm the negative impact of the relative amount of student work on unskilled youth (the estimated coefficient is positive in size, but increases the unemployment rate, thus it has a “negative \square effect), this is not the case for the impact of student work on the unemployment rate of all unskilled workers. Results of regression analysis for the studied period for model 4 reveal statistically insignificant effect of relative size of student work on unemployment rate of unskilled.

Results of regression analysis for model 5 reveal, that share of student work in total active population has a statistically significant positive effect on the general unemployment rate. However, this impact is rather weak. It is worth noting (again) that we are not talking about an absolute increase in student work by 1 percentage point, but about the increase of share of student work in active population by 1 percentage point. For year 2008, this would mean an increase from 3.8 to 4.8 percent of active population. In absolute terms this would mean an increase of student work by 26.3 per cent (if active population does not change), and this would lead to an increase in the general unemployment rate by 0.98 percentage points, other things being equal. The significance of this result from the economic point of view is thus rather small.¹⁵

5. Conclusion

It has often been claimed that owing to the preferential tax and regulatory treatment of student work, working students crowd out other groups of job-seekers, thus creating an anomaly in

¹⁴ In more details, our estimate of the nature of student work is represented in our article, studying the impact of student work on the success of study (Šušteršič, Nastav and Kosi, 2010).

¹⁵ When interpreting the regression analysis results we have to avoid the common mistake of concluding only on the basis of statistical significance, without taking into account the economic significance of estimated coefficients that show the strength of correlation (Ziliak and McCloskey, 2008).

the labour market. This claim has so far been tested by using survey data, either from official statistics or from special focused studies. The present article examines the scope and influence of student work in Slovenia on the basis of a relatively large sample on the level of individual student work referrals. The results suggest some novel findings or more accurate conclusions, which would be worth taking into account when considering a different organization of the student work sector.

By working through the student employment agency, high school and university students earn a total of about 300 million euro in a year. The amount of their work corresponds to approximately 30,000 full-time employments. Of all the work performed by students, about a third is performed by high school students and the rest by university students. In the period between 2005 and 2008, the total value of student work grew rapidly, at an average of 17 percent a year, while in 2009 there was an estimated drop of 6.4 percent. On the other hand, the amount of student work expressed in hours grew only half as fast from 2005 to 2008 and in 2009 fell by almost 20 percent compared to the previous year.

In the observed period (2005-2008), student work was approximately 45 percent cheaper for employers compared to the work of a person employed on a full-time basis with an average salary but, at the same time, considerably more expensive than the work of a person employed full-time earning a minimum wage. However, despite these cost-based advantages, the portion of student work in the whole employment is rather small, accounting to two percent of all labour costs or four percent of all hours worked. On the other hand, the amount of student work has a much more significant share if we consider only the population of younger persons, as it accounts for 15 percent of all the working population under 30 years of age.

From these data the hypothesis was drawn that student work can be seen as competition only to certain segments of the labour market, i.e. especially unskilled workers (above all young workers) and young graduates. This hypothesis was tested by a regression analysis in which the relation between the amount of student work and the unemployment rates in different segments of the labour force was tested taking into account the general economic conditions and seasonal patterns. The results suggest that student work has a statistically significant and quantitatively non-negligible positive impact on the unemployment rate of youth under the age of 30, and above all on the unskilled young population. As a result, student work affects also the general unemployment rate.

However, the regression analysis does not confirm the hypothesis that working students crowd out young graduates. One of the possible explanations of this finding could be related to the fact that students perform less demanding types of work. We estimate that approximately two thirds of work performed by students does not require specialised knowledge and skills, which students gain at the university, neither does it give students particular experience that could enhance their employability after graduation. This is in line with the results of some studies conducted for other countries, leading to the conclusion that this cannot be a characteristic typical for the structure of student work in Slovenia. A little less

than a third of all the student work performed are more demanding professional types of work in which students probably do employ knowledge and skills gained during the study process and upgraded and applied in practice. It is argued that these more demanding types of student work exert a positive impact on the future career development of the students who perform them.

Literature and sources

A sample of anonymous individual and aggregate data provided by selected student employment agency.

AJPES (Agencija RS za javnopravne evidence in storitve; Agency of the Republic of Slovenia for Public Legal Records and Related Services).

Baum, Christopher F., Mark E. Schaffer in Steven Stillman (2007). IVREG28: Stata module for extended instrumental variables/2SLS and GMM estimation (v8). [<http://ideas.repec.org/c/boc/bocode/s4254011.html>]

EVROŠTUDENT SI 2007 - Ekonomski in socialni položaj ter mednarodna mobilnost študentov v Sloveniji (Economic and social situation and international mobility of students in Slovenia), Ministry of higher education, science and technology, 65 p.

Ignjatović, Miroljub and Martina Trbanc (2009). Zaposlovanje in brezposelnost mladih: aktivni, fleksibilni in prilagodljivi (Youth employment and unemployment: active, flexible and adaptive); in: »Med otroštvom in odraslostjo: Analiza položaja mladih v Sloveniji 2009« (Between childhood and adulthood: analysis of youth situation in Slovenia), pp. 39-56.

SRWAP (Statistični register delovno aktivnega prebivalstva; Statistical registry of active population).

SORS (2009a). Anketa o delovni sili: Dejansko opravljene ure dela (Labour force survey: actual hours worked).

SORS (2009b). Dejansko opravljene ure dela, metodološka pojasnila (Actual hours worked: methodological notes). Obtained at: http://www.stat.si/vodic_oglej.asp?ID=141&PodrocjeID=0 dne 10.12.2009.

Šušteršič, Janez, Bojan Nastav and Tanja Kosi (2010). Student work and academic performance. Mimeo.

Ziliak, Stephen T. and Deirdre N. McCloskey (2008). The Cult of Statistical Significance. University of Michigan Press.