Unpaid internships and equality of opportunity: a pseudo-panel analysis of UN data

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Abstract

One of the most pressing arguments against unpaid internships is that they impose a barrier to upward economic mobility. Intern experience leads to better employment outcomes, yet only individuals from relatively advantaged backgrounds can afford an unpaid stint of three to six months, resulting in unequal access for individuals of more modest means. This could be particularly relevant in an international organization context, where individuals from a broad spectrum of nationalities are employed. Using a unique intern dataset, I test this hypothesis in a pseudo-panel linear probability model of paid versus unpaid internships, conditional on two proxies for equality of opportunity: parents education and developing country origin. I find that having more highly educated parents leads to a 30% higher chance of taking an unpaid internship, confirming the unequal access hypothesis; however, more surprisingly, I find that individuals from developing countries are much more likely to take an unpaid internship (75% higher) than their developed country counterparts. These results are robust to several different specifications, yet contradict cross-section OLS estimates, suggesting that the influence of unobserved time-invariant heterogeneity is substantial.

JEL codes: D63 J32 J45 J47 J62

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1 Introduction

One of the most common claims as to why interns should be paid is that internships are a means to obtaining better employment offers (Taylor, 1988; Gault et al., 2000), and yet unpaid work is much less feasible for students and young adults with fewer material resources (Curiale, 2009; Bennett, 2011). In this sense, the argument goes, unpaid internships deny opportunities to those individuals who could have benefited from them the most, while reserving this valuable career experience for those who seemingly already possess substantial economic opportunity. This could be particularly relevant to international organizations, such as those associated with United Nations, who employ individuals from a diverse spectrum of nationalities.

In this paper I estimate a linear probability model of internship payment, with the goal of better understanding the extent to which, if at all, individuals from economically privileged backgrounds are more likely to take an unpaid internship than individuals from more modest backgrounds. If is indeed the case, this lack of remuneration would serve as a barrier to what is arguably an important pathway to upward career mobility.

I estimate the model using a unique dataset of intern characteristics, collected via an online survey distributed among interns at a host of international organizations, with a strong representation from the United Nations. These intern samples are larger than other similar surveys (such as McHugh, 2017), not limited to a single educational institution, are relatively recent, and contain important data on family background characteristics. However, as the data is collected in several annual cross-sections, individuals cannot be tracked over time to control for individual fixed effects. As pooled statistical analysis of such data is likely inconsistent, I use the pseudo-panel estimation method proposed by Deaton (1985), with an extension by Moffitt (1993) that allows for clean estimation of a linear probability model (Verbeek, 2008).

An extensive labor economics literature examines the association between compensation rates and job characteristics (Currall et al., 2005; Siebert and Wilson, 2013), but few studies investigate the nature of unpaid internships. McHugh (2017) finds that paid internships tend to offer better career experience than unpaid internships, but does not examine other intern characteristics. Several legal studies (Curiale, 2009; Bennett, 2011) and a host of articles in the news media claim that unpaid internships are inaccessible to low-income individuals and serve to reduce social mobility, but are not based on any empirical evidence. This is the first study, to my knowledge, to perform an empirical analysis of intern payment in relation to measures of equality of opportunity.

2 Model

I estimate a simple linear probability model of unpaid versus paid internships that takes the form:

$$unpaid_{it} = \beta_1 paredu_{it} + \beta_2 dev_{it} + \beta_3 fund_{it} + \alpha_i + e_{it} \tag{1}$$

for $i = 1, ..., N$ and $t = 1, ..., T$, in which all variables are in binary format, coded as 0 or 1. $unpaid_{it}$ indicates if an intern is paid (or not), $fund_{it}$ indicates if intern received funding from an external source, $paredu_{it}$ indicates if at least one parent attained an advanced graduate degree (masters or higher), dev_{it} indicates whether the intern originates from a developing country, and α_i are individual-specific fixed effects.

This model captures two forms of equality (or inequality) of opportunity. First, parent's education is a proxy for social class background. A positive estimate for β_1 would indicate that individuals from higher-educated families have a higher probability of taking an unpaid internship, i.e. that unpaid internships are not equally accessible to interns from more modest social class backgrounds.[1] Second, a negative coefficient on β_2 would indicate that interns from developing countries have less access to unpaid internships relative to paid ones, ostensibly because these interns have fewer material resources to support themselves in a foreign (often more expensive) country without a regular salary. Whether or not an intern receives external funding during the internship period is the only other substantial factor in internship choice, the effect of which is captured in β_3. Other individual characteristics should not influence internship choice, and other financial considerations, such as monthly expenses, are determined after internship choice has been made.

Direct estimation of Equation 1 is not possible as the intern data are only available as a series of cross-sections, so the same individuals i are not observed over time. To approximate individual effects, I estimate a pseudo-panel model in which individual outcomes are averaged by cohort, c, and estimated alongside cohort fixed effects (Deaton, 1985). I define cohorts by age groups crossed with region-of-origin groups, which effectively adds these characteristics as controls in the model. This results in a transformed model of the form:

$$\overline{unpaid}_{ct} = \beta_1 \overline{paredu}_{ct} + \beta_2 \overline{dev}_{ct} + \beta_3 \overline{fund}_{ct} + \overline{\alpha}_{ct} + \overline{e}_{ct} \tag{2}$$

for $c = 1, ..., C$ and $t = 1, ..., T$. A significant caveat is that this model is error ridden in small samples because $\overline{\alpha}_{ct}$ will be a poor estimate for α_i (Deaton, 1985; Verbeek and Nijman, 1992). The silver lining is that due to this measurement error, I am able to identify time-invariant effects such as those arising from parent's education or region of origin, which would otherwise

[1] I choose an advanced graduate degree of the threshold as roughly half the interns in the sample have parents who have attained this level (50% in 2016, 64% in 2017).

be perfectly collinear with α_i.

A second consideration is that averaging by cohort will distort any binary encoded indicators. To account for this, I follow Moffitt (1993) and model individual effects α_i in Equation 1 as the sum of a cohort effect, α_c, and a deviation from the individual effect, v_i. This allows me to write Equation 1 as:

$$unpaid_{it} = \beta_1 paredu_{it} + \beta_2 dev_{it} + \beta_3 fund_{it} + \boldsymbol{z_i}\boldsymbol{\alpha} + v_i + e_{it} \tag{3}$$

in which $\boldsymbol{z_i} = [z_{i1}, ..., z_{iC}]$, i.e. a set of C binary vectors, where each z_i is equal to 1 if individual i is a member of cohort c. The unidentified individual-specific effect is now represented by v_i, and is likely correlated with the other explanatory variables, rendering OLS estimation inconsistent. Moffitt (1993) calls for estimation via 2SLS, using the cohort binary variables $\boldsymbol{z_i}$ interacted with time as instruments.[2] The first stage reduced form of the estimation effectively averages the covariates by cohort and time, as done in Equation 2. The resulting estimator is asymptotically consistent for fixed C as $N \to \infty$, yet could still be biased in small samples. To account for this, I estimate bias-corrected coefficients and standard errors via bootstrapping, in addition to standard 2SLS estimates. Estimation is done in R, using the 'boot' package for bootstrapping procedures.

3 Data

I use data graciously provided to me by the Fair Internship Initiative (FII), a Geneva-based organization that advocates for equal access to internships, with a particular emphasis on those offered in the United Nations system. The survey data was collected via an online form that was circulated among interns through email listservs and social media networks (Fair Internship Initiative, 2018). The survey data are volunteer samples, and are not representative of all interns or even of all UN interns, so the necessary caveats regarding interpretation of results should apply.

I use FII survey samples from 2016 and 2017, which contain the necessary parental data. I refer to the 2019 UN Country Classifications to classify geographical regions and "developing" status (United Nations, 2019). Cohorts are defined by four age groups crossed with six region groups for a total of 24 cohorts. Regions are chosen to balance cohort sizes, yielding an average size of 23.3. UN interns comprise two-thirds of the sample,[3] and I re-run estimates on this subset as a robustness check. Roughly two-thirds of interns are unpaid, half have parents who have attained an advanced graduate degree, a quarter are from developing countries, and a quarter received external funding.

[2] This allows for the identification of developing country origin, as the IVs are not collinear with this measure.

[3] These include any organization in the United Nations Sustainable Development Group (`unsdg.un.org`).

4 Results

Pseudo-panel estimates of Equation 3 via 2SLS begin in Table 1, column 4. Interns having parents with advanced graduate degrees are a 37% more likely to have an unpaid internship than a paid one, suggesting that these individuals have greater access to the material resources required to sustain a typical period of 3-6 months of unpaid employment. This implies that unpaid internships are indeed a barrier to gaining important work experience early on in a career. Individuals from a developing country have a 78% higher probability of taking an unpaid internship, which runs contrary to what one may expect, if one assumes that individuals from developing countries have less opportunity to take unpaid work. These interns may have families that are disproportionately endowed vis-à-vis interns from developed countries.

External funding is not significant in the pseudo-panel estimates. If external funding schemes are awarded on a meritocratic basis, receiving funding would be highly correlated with individual ability, which itself should be eliminated via fixed effects. Therefore this result is not surprising.

Column 5 reports bias-corrected coefficient estimates, which use the median of the bootstrapped series, and p-values based on bootstrapped standard errors. The corrected coefficients are of slightly smaller magnitude, but still generate relatively small standard errors. Verbeek and Nijman (1992) estimate that the bias in uncorrected pseudo-panel estimates is around 24% for cohort sizes of 25 (in this study the average cohort size is 23.3). I find bootstrapped estimates that are 18% lower for parents' education, and 4% smaller for developing country, which is not completely out of line with predictions, assuming the bootstrapped estimates are closer to the true parameter. If take the conservative position that estimates in column 4 are biased upward by 24%, true coefficients would be closer to 0.29 for parents' education and 0.63 for developing country origin.

2SLS estimates using the restricted UN-only sample are in column 6, and with bootstrapped coefficient estimates and p-values in column 7. These estimates are slightly smaller than those of the full sample, but in both cases estimates remain very precise. For all 2SLS estimates, specification tests indicate that instruments are jointly relevant (first-stage F-statistic), endogenous in the structural model (Wu-Hausman test), and uncorrelated with the error term (Sargan test for overidentifying restrictions).

OLS estimates of parents' education and developing country origin (columns 1-3) are less consistent with 2SLS estimates, suggesting that the influence of unobserved time-invariant heterogeneity is substantial. In contrast to the pseudo-panel results, all three OLS models suggest that external funding has a positive effect on the probability of having an unpaid internship, increasing chances by between 14% and 20%.

Table 1: Linear probability model estimates of paid vs. unpaid internships

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	2016	2017				UN sample only	
	OLS	OLS	OLS	2SLS	2SLS	2SLS	2SLS
Parents' education	-0.035	0.087	0.003	0.365	0.302	0.355	0.290
	(0.281)	(0.092)	(0.910)	(0.024)	(0.022)	(0.015)	(0.027)
Developing country	0.102	-0.085	0.741	0.782	0.752	0.549	0.591
	(0.008)	(0.102)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
External funding	0.197	0.143	0.171	-0.506	-0.195	0.177	0.138
	(0.000)	(0.005)	(0.000)	(0.134)	(0.743)	(0.541)	(0.290)
Cohort fixed effects			Y	Y	Y	Y	Y
Bootstrapped $\hat{\beta}$, $\hat{\sigma_\beta}$					Y		Y
F-statistic 1st stage				91.62		102.40	
				(0.000)		(0.000)	
Wu-Hausman test				6.78		2.77	
				(0.001)		(0.064)	
Sargan test				14.11		11.45	
				(0.367)		(0.574)	
F-statistic	11.58	4.02	147.70				
	(0.000)	(0.008)	(0.000)				
R^2	0.041	0.038	0.708				
Observations	820	310	1115	1115	1115	702	702

Notes: Estimates of Equation 3. Estimates in columns 1-2 include a constant term. Estimates in columns 5 and 7 are bias-corrected, using the median of the bootstrapped estimates, and p-values (in parenthesis) are based on bootstrapped standard errors. All other p-values (in parenthesis) are based on robust standard errors. Data processing and estimation is done with R, using the 'AER' package for 2SLS estimates and the 'boot' package for bootstrapping procedures.

5 Discussion

An important consideration in interpreting these results is that they are conditional on individuals having an internship. This implies having the ability, education, and other skills required to qualify for these internships, and having had the opportunity to acquire those qualifications as well.

Given the sample limitations, it is not surprising that the model is unable to capture the disadvantages of originating from a developing country. Clearly, individuals in developing countries have less access (on average) to higher education and other qualification-building resources compared to their developed country counterparts. Yet, when a sample is selected conditional on having an internship, these differences disappear, and in fact individuals from developing countries appear more likely to pay the opportunity cost of an unpaid internship.

This implies that selection of individuals into such an intern pool is much more unequal in developing than in developed countries.

What is perhaps more surprising is that even within this select sample of individuals, there is yet evidence that unpaid internships are an institutionalized barrier to upward career mobility. Interns with more highly educated parents are substantially more likely to take an unpaid internship—a result that is robust across several specifications. Given what we know of the association between education and income level, it appears that unpaid internships incur a real cost that is less affordable to those of more modest means.

While these results imply that a ceteris paribus exchange of unpaid internships for paid ones would equalize access, this may not apply in practice. Most organizations operate on fixed budgets, and any mandate requiring intern payment could just result in the elimination of unpaid internships—without their replacement with paid positions. Establishment of paid internships will require more than new legislation, and work must be done within organizations to incorporate them into the employment structure. Doing so will equalize access, and foster the development of an important avenue for upward career mobility.

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