



# **Should Student Employment Be Subsidized? Conditional Counterfactuals and the Outcomes of Work-Study Participation**

**Judith Scott-Clayton & Veronica Minaya**  
Teachers College  
Columbia University

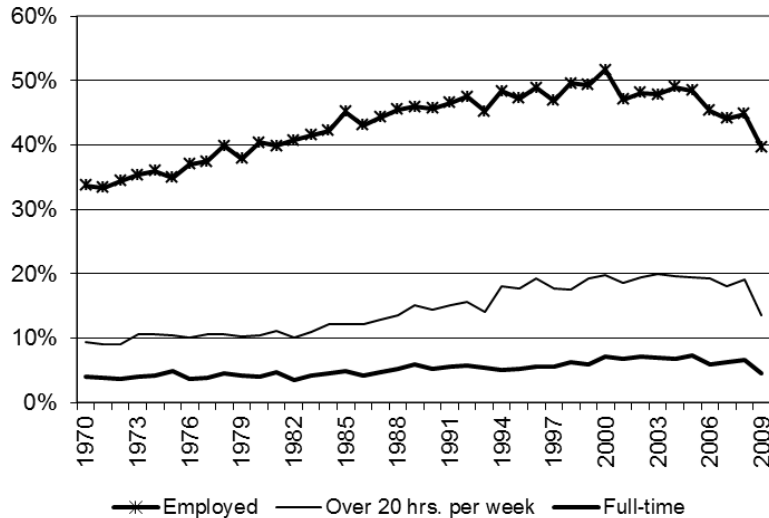
- September 19, 2014 | CAPSEE Conference | Washington, DC

# Outline

- Motivation
- The Federal Work-Study Program
- Conceptual Framework
- Propensity Score Estimation
- Main Results
- Discussion

# Motivation: Trends in Student Employment

A. Employment



B. Average Weekly Hours



- Student employment today is part of the typical undergraduate experience
- Is this economically optimal? Should policy encourage, discourage, or be uninvolved?

# The Federal Work-Study Program

- Federal Work-Study is a significant source of student aid
  - Provides ~\$1 billion in wage subsidies to over 700,000 students per year (covers up to 75% of wages)
    - 83% allocated to 4-year colleges and 17% to 2-year colleges
  - Far more students qualify than receive FWS; institutions have discretion
  - About 10% of FT undergraduates participate
- FWS jobs differ from other student jobs in important ways
  - 84% on-campus (compared to 8% of non-FWS jobs)
  - Average 11 hrs/wk (compared to 18 hrs/wk for non-FWS jobs)
  - 60% clerical/manager/professional (vs. 40% for non-FWS jobs)
- Even though more students think FWS has negative effect (24%) than positive effect (16%) on academics, this ratio is much worse for non-FWS jobs (33% negative to 11% positive)

# Conceptual Framework

- Overall subsidy impact is a combination of effects on students who were going to be working anyway and students who were induced to work
- Effects on academic outcomes and future labor market outcomes may be very different:
  - Compared to other working students: FWS jobs may be more complementary with academic focus, and also may be more flexible and come at lower cost to academic outcomes
  - Compared to not working at all: FWS may help students by giving them valuable work experience

# Propensity Score Estimation

# Propensity Score Estimation

- Data: full-time dependent undergrads at 4-year colleges, using two waves of the nationally-representative Beginning Postsecondary Students survey (BPS:96/01 and BPS:04/09)
- Methodology:
  - Match similar FWS participants and non-participants on the estimated probability of receiving FWS
  - FWS participants compared against two separate counterfactuals: 1) most similar working students, and 2) most similar non-working students.

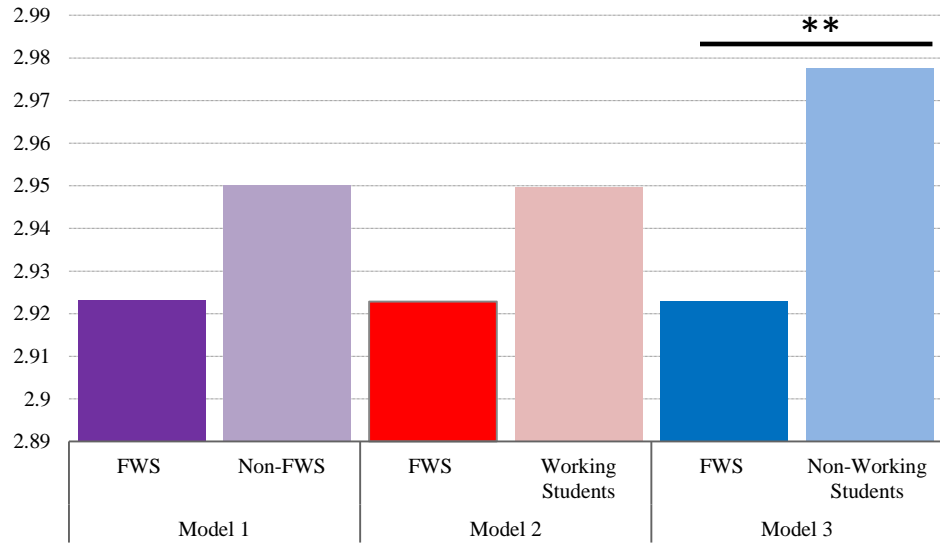
# Results



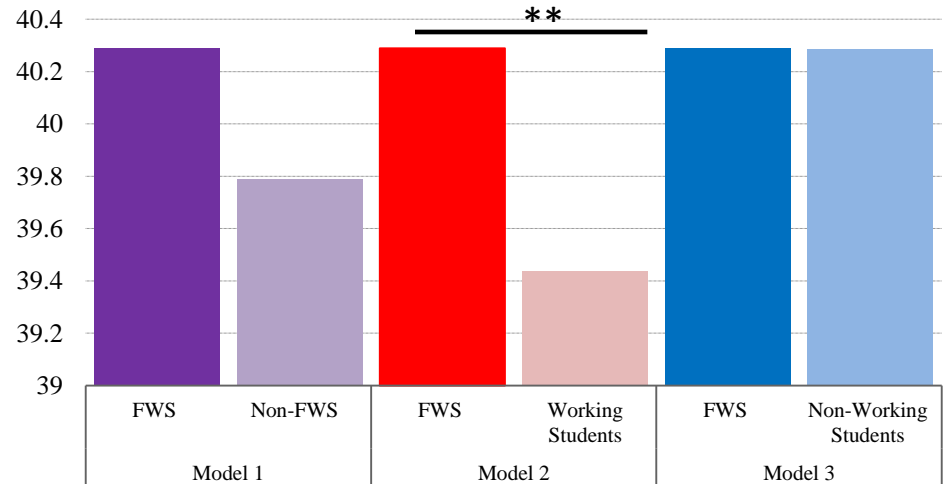
# Main Results

- About half of work-study participants probably would have worked anyway and work less because of the program; the other half work more hours because of the program (Table 1)
- The program affects these two groups differently
- Lower-income and lower-scoring students experienced especially large academic gains

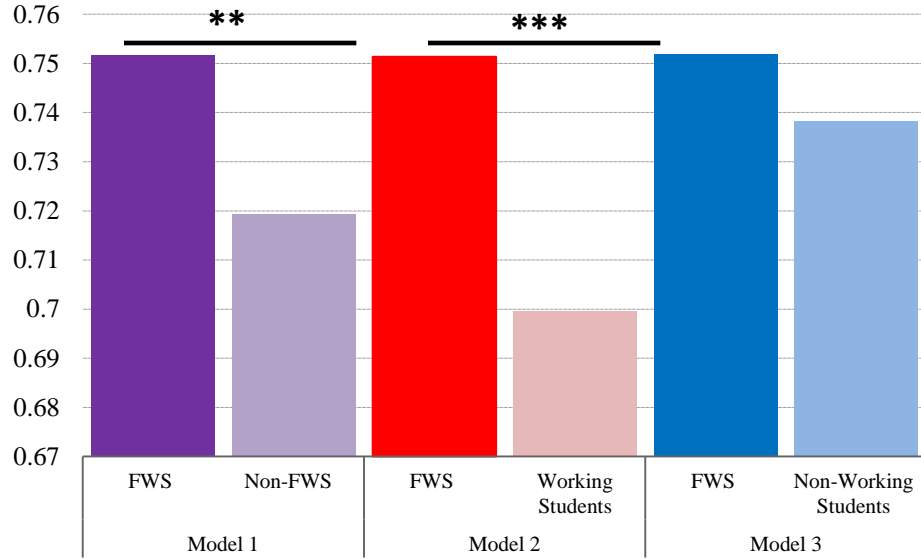
## GPA in Year 1



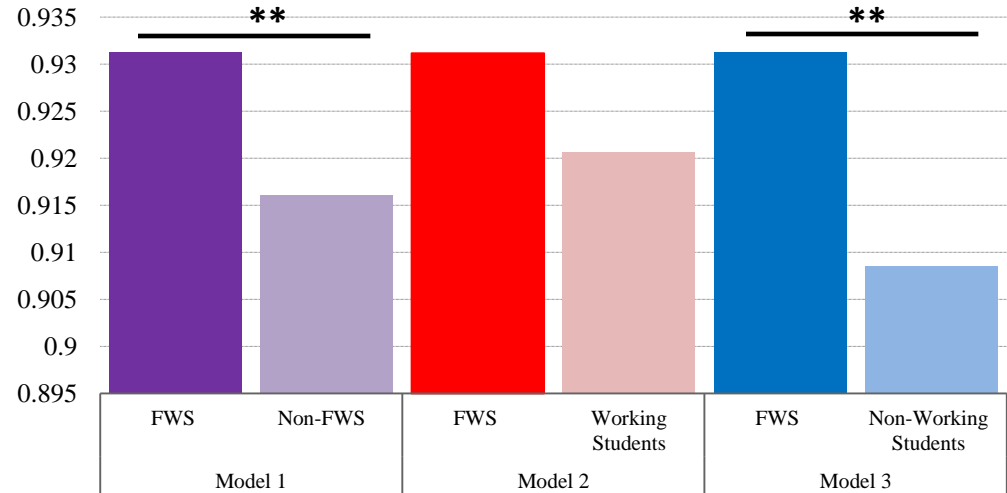
## Number of months enrolled through year 6



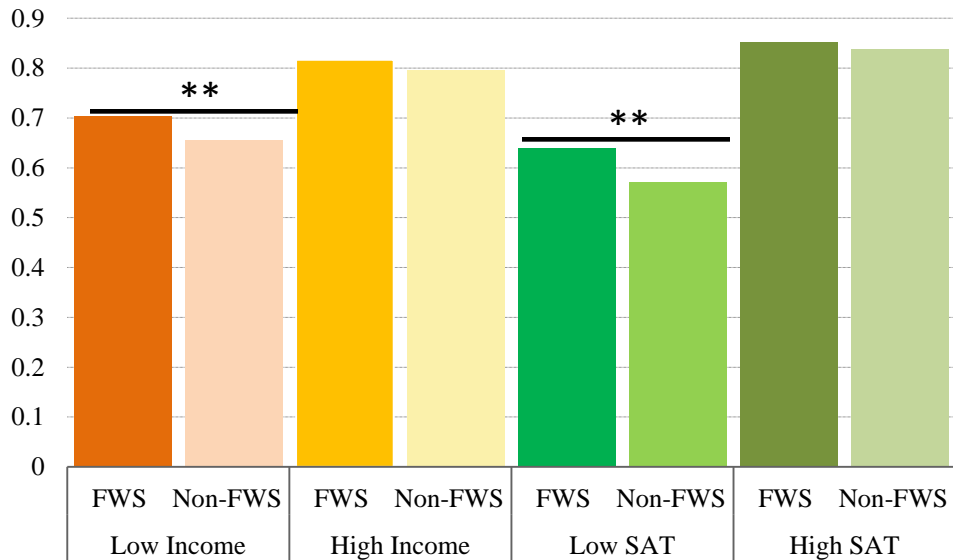
## Earned a BA within 6 years



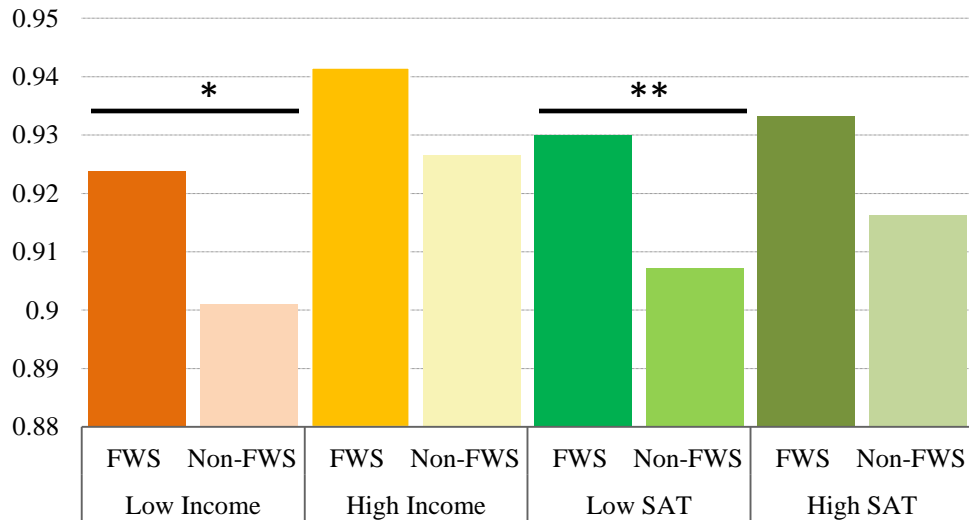
## Enrolled or employed in year 6



## Earned a BA within 6 years



## Enrolled or employed in year 6



# Discussion

- Results suggest that work-study is an effective form of student aid
- Effects could be augmented by modifying the allocation formula to better target lower-income and lower-scoring students
- Job characteristics make a difference
- Results do imply that main effects of student employment are negative for academics but potentially positive for employment outcomes

Visit us on the web at [capseecenter.org](http://capseecenter.org)

We're also on Facebook and Twitter.

Center for Analysis of Postsecondary Education and Employment

Teachers College, Columbia University

525 West 120th Street, Box 174, New York, NY 10027

[capsee@columbia.edu](mailto:capsee@columbia.edu)

212.678.3091

# Index of Results

- Sample Descriptives: Background Characteristics
- Main Results
- High and Low SAT
- High and Low Income

# Sample Descriptives: Background Characteristics

BPS 1996-2001 & BPS 2004-2009 Sample Characteristics				
Variable	Total	FWS Recipients	Working non-recipients	Non-working students
<i>Student Background and Institutional Characteristics</i>				
Female (in %)	55.4	62.0	55.1	53.4
White, non-Hispanic (in %)	72.6	69.4	74.6	71.6
Age at entry (in years)	18.4	18.3	18.5	18.3
Parental Income (In 2003 Constant Prices)	\$76,216	\$52,513	\$74,311	\$86,678
High School GPA $\geq$ 3.00 (in %)	81.8	85.1	78.9	83.8
Derived SAT Score	1026	1033	1002	1051
Received any Pell Grant (in %)	26.0	46.1	24.0	21.2
First Institution: Public Institution (in %)	61.8	33.3	67.5	65.5
First Institution: Non/Least selective (in %)	33.6	29.7	40.1	27.7
First Institution: Selective (in %)	39.1	39.6	40.0	38.0
First Institution: Very selective (in %)	27.3	30.7	20.0	34.3
First Institution: Tuition and fees	\$9,562	\$14,478	\$7,940	\$9,621
First institution, total enrollment	14006	9279	14297	15338



# Table 1. Main Results

Variable	Model 1			Model 2: FWS vs. Working Students			Model 3: FWS vs Non-Working Students		
	B	S.E.		B	S.E.		B	S.E.	
Any employment during school year	0.478	(.01)	***						
Total hours worked per week in year 1	6.236	(.336)	***	-1.539	(.375)	***	15.041	(.24)	***
GPA in year 1	-0.027	(.022)		-0.027	(.027)		-0.055	(.028)	**
Still enrolled or attained during year 2	0.011	(.006)	*	0.012	(.008)		0.005	(.007)	
Number of months enrolled through year 6	0.503	(.321)		0.852	(.405)	**	0.003	(.387)	
Earned a BA within 4 years	0.011	(.014)		0.029	(.016)	*	-0.005	(.018)	
Earned a BA within 6 years	0.032	(.013)	**	0.052	(.016)	***	0.014	(.016)	
Enrolled or employed in year 6	0.015	(.008)	**	0.011	(.009)		0.023	(.01)	**
Enrolled (graduate or undergraduate) in year 6	-0.006	(.013)		-0.010	(.016)		-0.008	(.017)	
Employed in year 6, of those not enrolled	0.024	(.011)	**	0.014	(.013)		0.037	(.014)	**
Employed in year 6	0.021	(.014)		0.021	(.016)		0.031	(.018)	*
Log of total earnings from current job in year 6	-0.023	(.021)		-0.028	(.024)		-0.018	(.027)	
Enrollment in graduate school in year 6	0.007	(.011)		0.007	(.013)		0.001	(.014)	

# Table 1. Main Results

Variable	Model 1			Model 2: FWS vs. Working Students		Model 3: FWS vs Non-Working Students	
	B	S.E.		B	S.E.	B	S.E.
Any employment during school year	0.478	(.01)	***				
Total hours worked per week in year 1	6.236	(.336)	***	-1.539	(.375)	***	15.041 (.24) ***
GPA in year 1	-0.027	(.022)		-0.027	(.027)		-0.055 (.028) **
Still enrolled or attained during year 2	0.011	(.006)	*	0.012	(.008)		0.005 (.007)
Number of months enrolled through year 6	0.503	(.321)		0.852	(.405)	**	0.003 (.387)
Earned a BA within 4 years	0.011	(.014)		0.029	(.016)	*	-0.005 (.018)
Earned a BA within 6 years	0.032	(.013)	**	0.052	(.016)	***	0.014 (.016)
Enrolled or employed in year 6	0.015	(.008)	**	0.011	(.009)		0.023 (.01) **
Enrolled (graduate or undergraduate) in year 6	-0.006	(.013)		-0.010	(.016)		-0.008 (.017)
Employed in year 6, of those not enrolled	0.024	(.011)	**	0.014	(.013)		0.037 (.014) **
Employed in year 6	0.021	(.014)		0.021	(.016)		0.031 (.018) *
Log of total earnings from current job in year 6	-0.023	(.021)		-0.028	(.024)		-0.018 (.027)
Enrollment in graduate school in year 6	0.007	(.011)		0.007	(.013)		0.001 (.014)

# Table 2. High and Low SAT

Variable	Model 1: Higher SAT			Model 1: Lower SAT		
	B	S.E.		B	S.E.	
Any employment during school year	0.503	(.015)	***	0.429	(.014)	***
Total hours worked per week in year 1	6.396	(.438)	***	5.551	(.537)	***
GPA in year 1	-0.015	(.027)		-0.033	(.034)	
Still enrolled or attained during year 2	0.008	(.007)		0.015	(.011)	
Number of months enrolled through year 6	0.180	(.368)		1.090	(.565)	*
Earned a BA within 4 years	0.005	(.02)		0.022	(.02)	
Earned a BA within 6 years	0.013	(.016)		0.068	(.021)	***
Enrolled or employed in year 6	0.017	(.011)		0.023	(.011)	**
Enrolled (graduate or undergraduate) in year 6	0.003	(.019)		-0.020	(.019)	
Employed in year 6, of those not enrolled	0.033	(.016)	**	0.026	(.016)	
Employed in year 6	0.014	(.02)		0.043	(.021)	**
Log of total earnings from current job in year 6	-0.022	(.031)		-0.028	(.03)	
Enrollment in graduate school in year 6	0.007	(.018)		0.014	(.014)	

# Table 3. High and Low Income

Variable	Model 1: High Income		Model 1: Low Income	
	B	S.E.	B	S.E.
Any employment during school year	0.502	(.013) ***	0.447	(.015) ***
Total hours worked per week in year 1	5.964	(.439) ***	6.529	(.543) ***
GPA in year 1	-0.055	(.03) *	0.007	(.035)
Still enrolled or attained during year 2	0.006	(.007)	0.013	(.011)
Number of months enrolled through year 6	-0.087	(.405)	0.873	(.551)
Earned a BA within 4 years	0.003	(.02)	0.020	(.021)
Earned a BA within 6 years	0.020	(.017)	0.048	(.021) **
Enrolled or employed in year 6	0.015	(.01)	0.023	(.012) *
Enrolled (graduate or undergraduate) in year 6	-0.019	(.019)	0.010	(.02)
Employed in year 6, of those not enrolled	0.018	(.015)	0.030	(.018) *
Employed in year 6	0.034	(.02) *	0.013	(.022)
Log of total earnings from current job in year 6	-0.033	(.03)	-0.019	(.033)
Enrollment in graduate school in year 6	-0.014	(.017)	0.036	(.016) **