Impacts of state aid for non-traditional students

September 2018

(Does not include updated results in 2019 versions)

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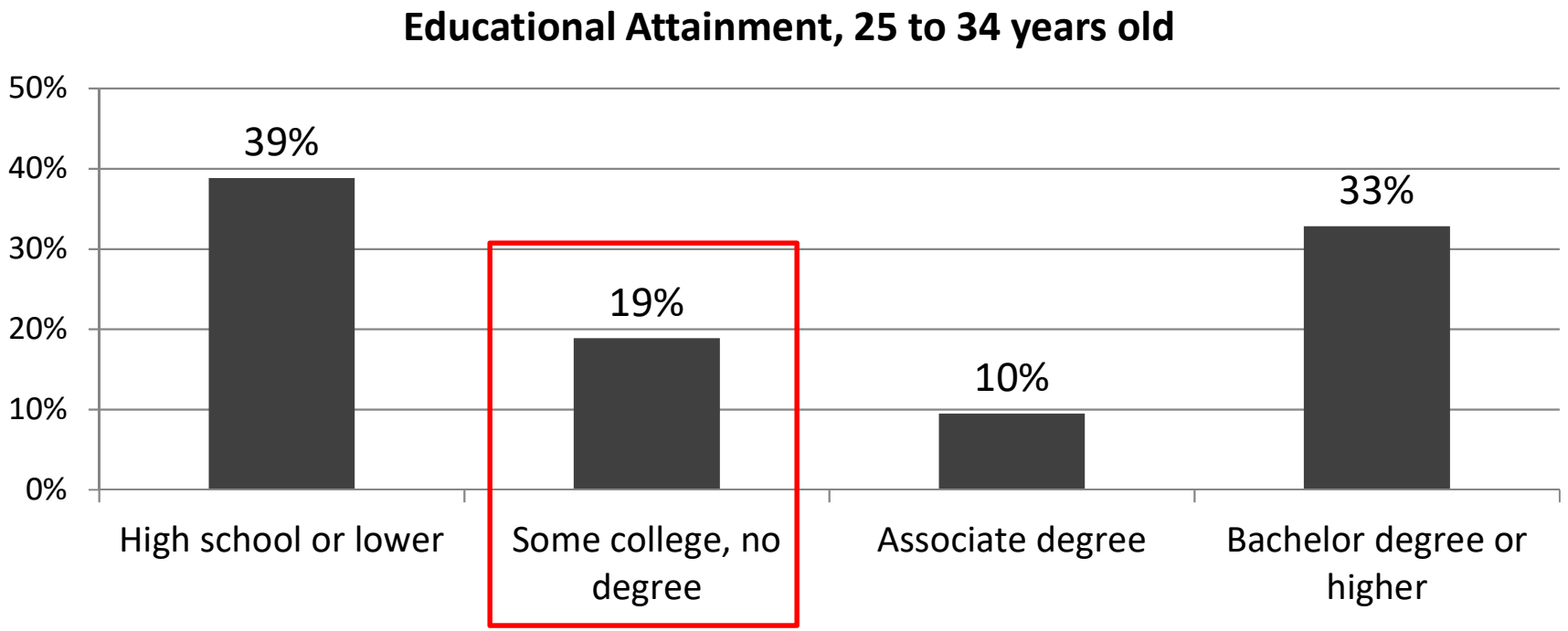
Background

- Postsecondary attainment has increased over the last few decades…as have dropouts



Source: Current Population Survey Annual Social and Economic Supplement, 2010

Background

- Financial aid ~30% of state and federal expenditures on higher education (Pew Charitable Trust, 2015)
- Positively impacts undergraduate attendance and completion (Angrist, Autor, Hudson, & Pallais, 2014; Castleman & Long, 2016; Denning, Marx, & Turner, 2017; Dynarski, 2000, 2003, 2004, 2008; Fitzpatrick & Jones, 2016; Goldrick-Rab, Kelchen, Harris, & Benson, 2016; Scott-Clayton, 2011; Scott-Clayton & Zafar, 2016)
  - Cal Grant award led to higher graduate degree completion and wages (Bettinger, Gurantz, Kawano, Sacerdote & Stevens, 2019)

Research Question

- Does financial aid help “non-traditional” students?
  - Older, independent, working adults
- Implications for workforce development
  - Voucher program for re-training
  - Policy shifts towards continued schooling do not consistently match rhetoric

Research Question

- Impacts of aid may be weaker for non-traditional students
  - Larger monetary and non-monetary constraints
  - Better information on college benefits and "costs"
- Few studies with non-traditional students
  - "Opening Doors" in community colleges, military veterans (Barr, 2016; Denning, 2017; Mayer, et al., 2016; Richburg-Hayes et al., 2009; Patel & Valenzuela, 2013; Richburg-Hayes, Sommo, & Welbeck, 2011)

Context

- Competitive Cal Grant program
  - Submit FAFSA and GPA verification form
  - Over 900,000 unique applicants from 2002 to 2011
  - Outcomes from National Student Clearinghouse and Unemployment Insurance (UI) data
- Award includes $1500 “subsistence” and:
  - Community college: None but covered by “BOGS”
  - Four-year public: Full tuition
  - Private: $9,700 tuition

Table 1. Descriptive Statistics, First-time Competitive award

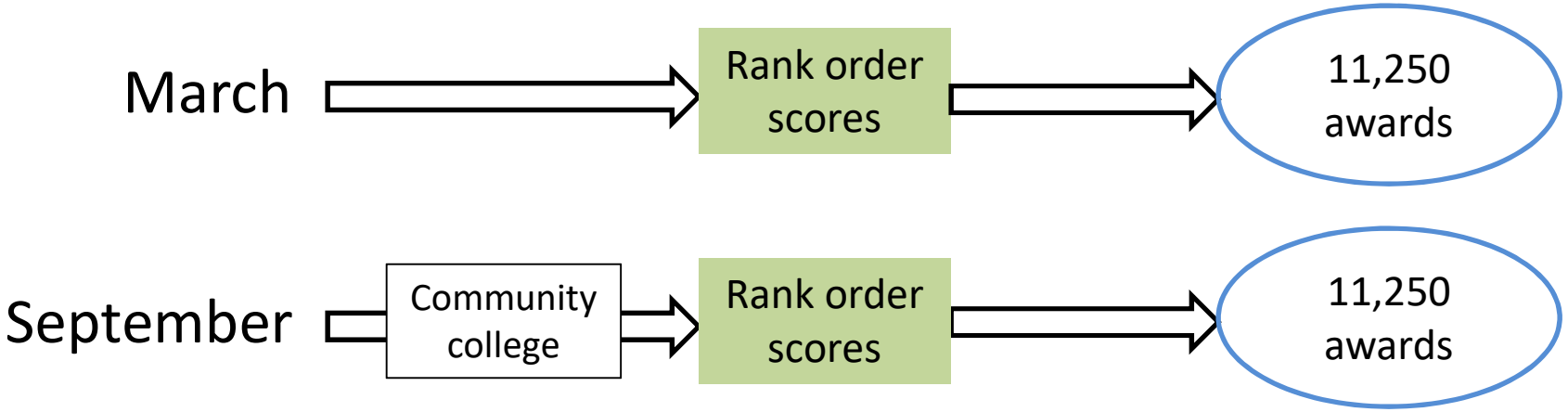
Application cycle	All
FAFSA type	All
Years	2002-2011
N	911,492
	Estimate
Female	58%
Dependent Student	39%
Age: dependent	21
Age: independent	31
Application GPA	2.8
Income	$20,923
FAFSA educational background	
No college experience	9%
1st year	22%
2nd year	38%
3rd year or higher	30%
FAFSA school listings	
Number of Schools	1.3
Only one school listed	85%

Almost all non-traditional students list only one school on FAFSA

Considering few postsecondary options

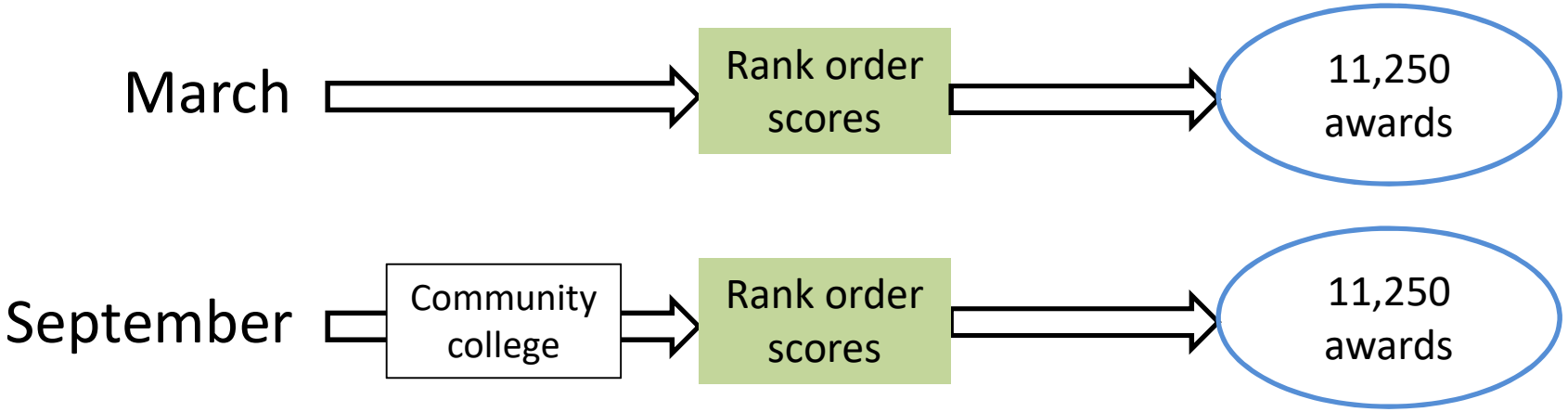
Competitive Application Cycles

- Assigned up to 200 points
  - GPA (35%) and need (65%): Income and family size; Parent education, Household status, "Access Equalizer"



Competitive Application Cycles

- Awards offered using a year-varying and unknown eligibility cutoff
- Example: Students with 165 points are offered an award but those with 164 points are not

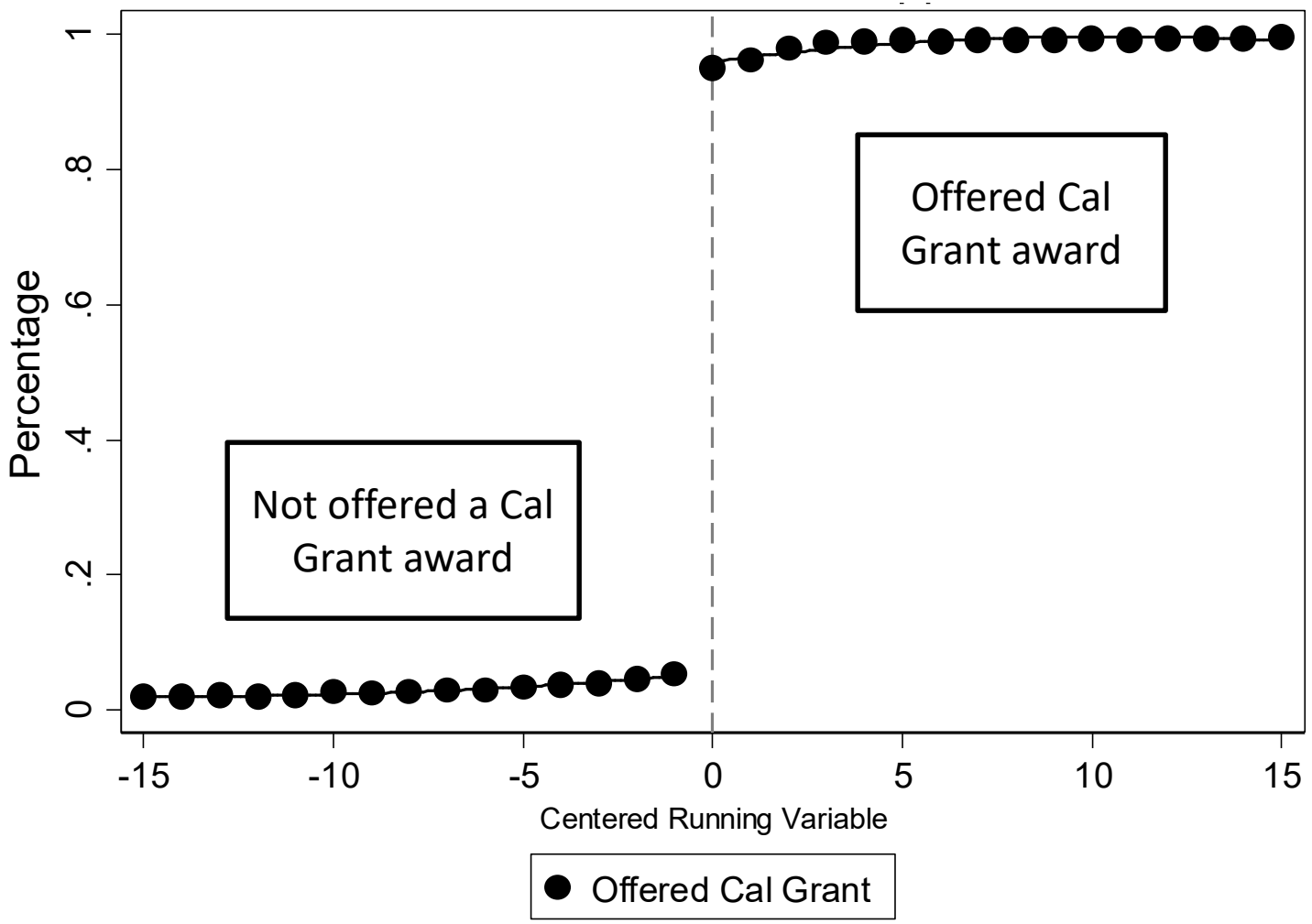


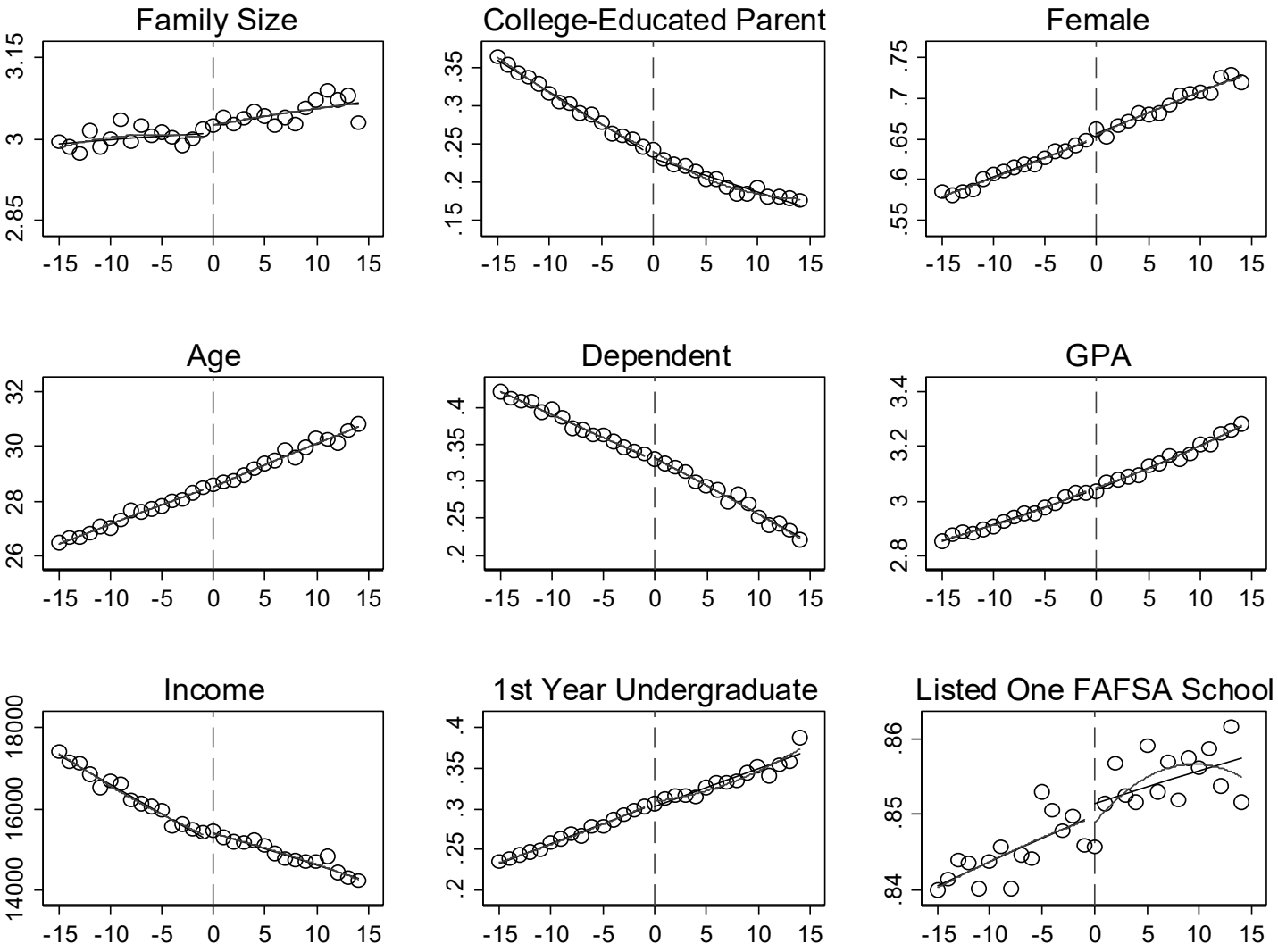
Research Design

- Regression discontinuity design
  - Can provide causal impacts when eligibility determined by a known assignment variable

- Students near the eligibility threshold essentially randomly assigned
  - Research design is valid if applicants are unable to precisely manipulate their position

Cal Grant Offer, All Applicants





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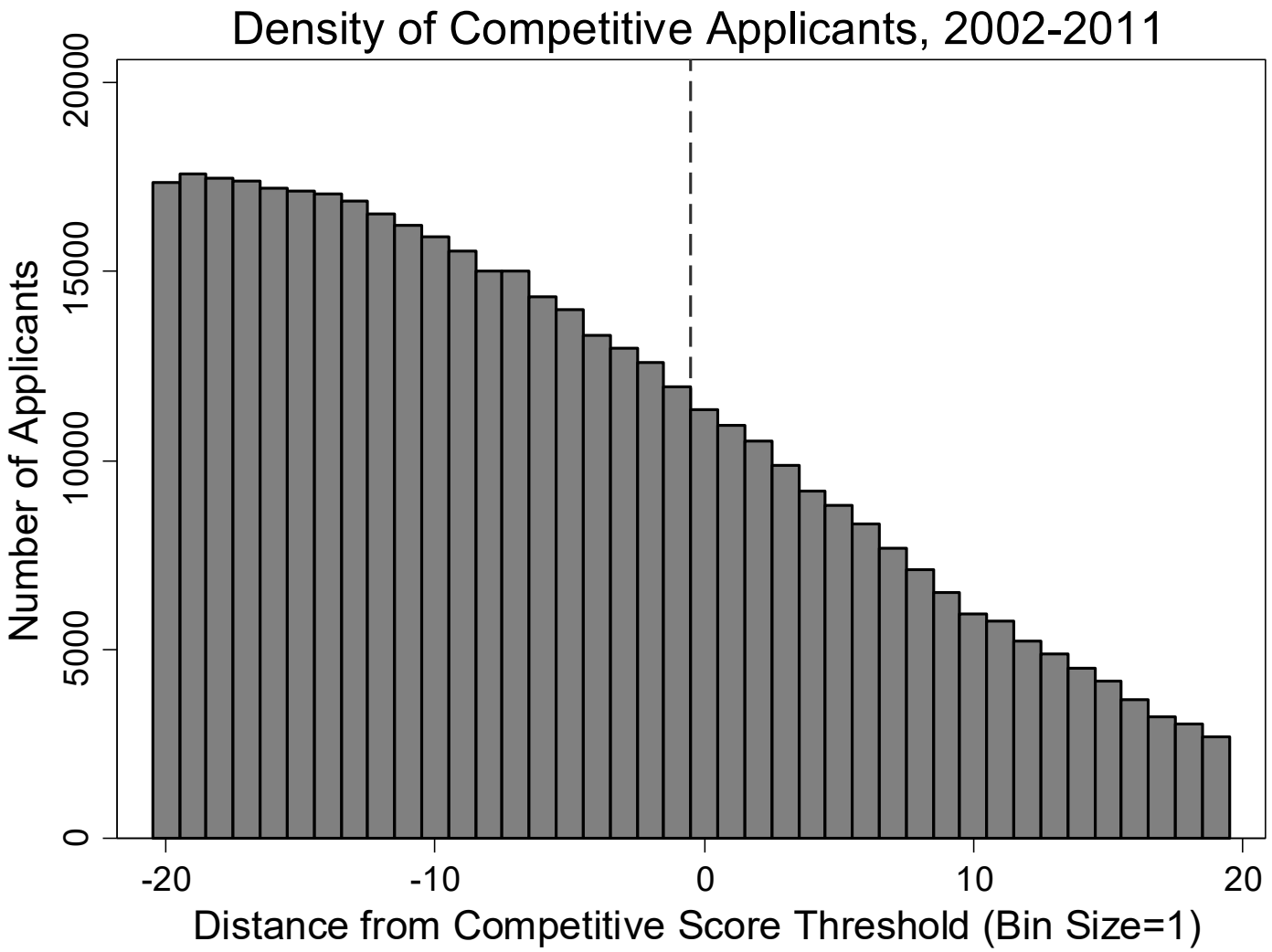

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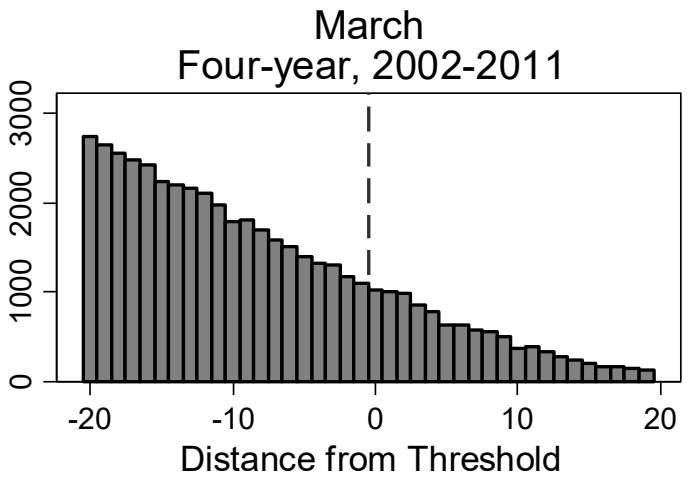
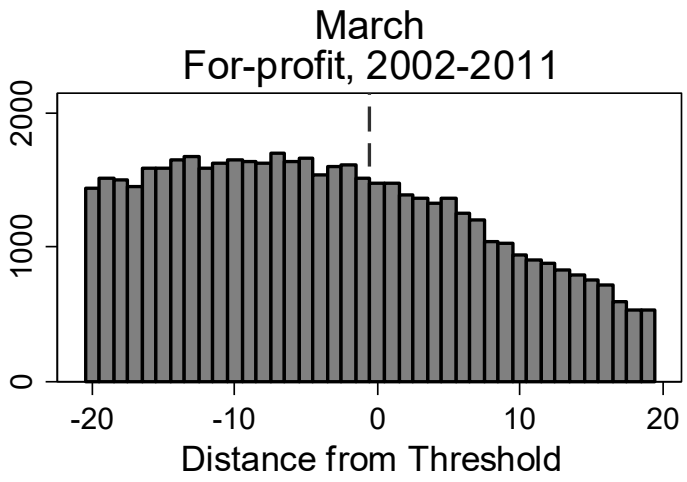
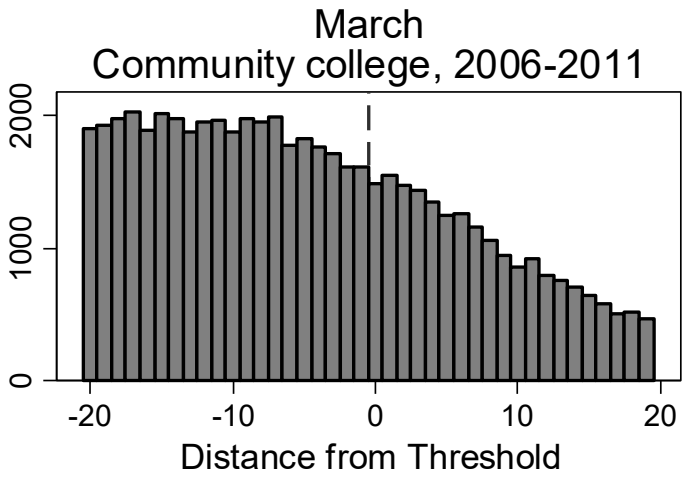
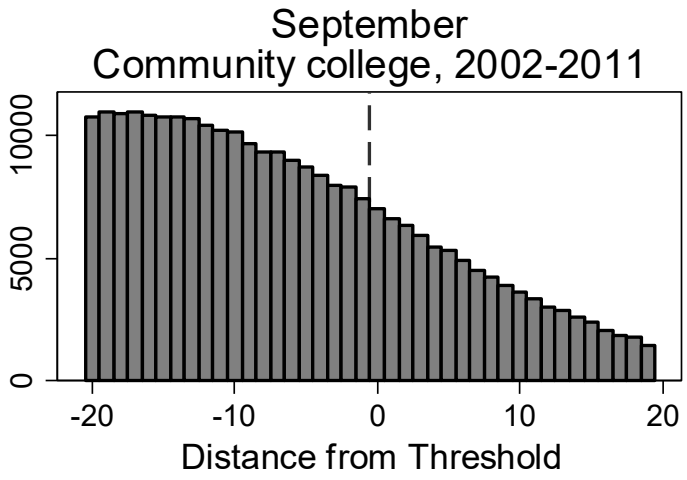
Density of Competitive Applicants, by FAFSA Type

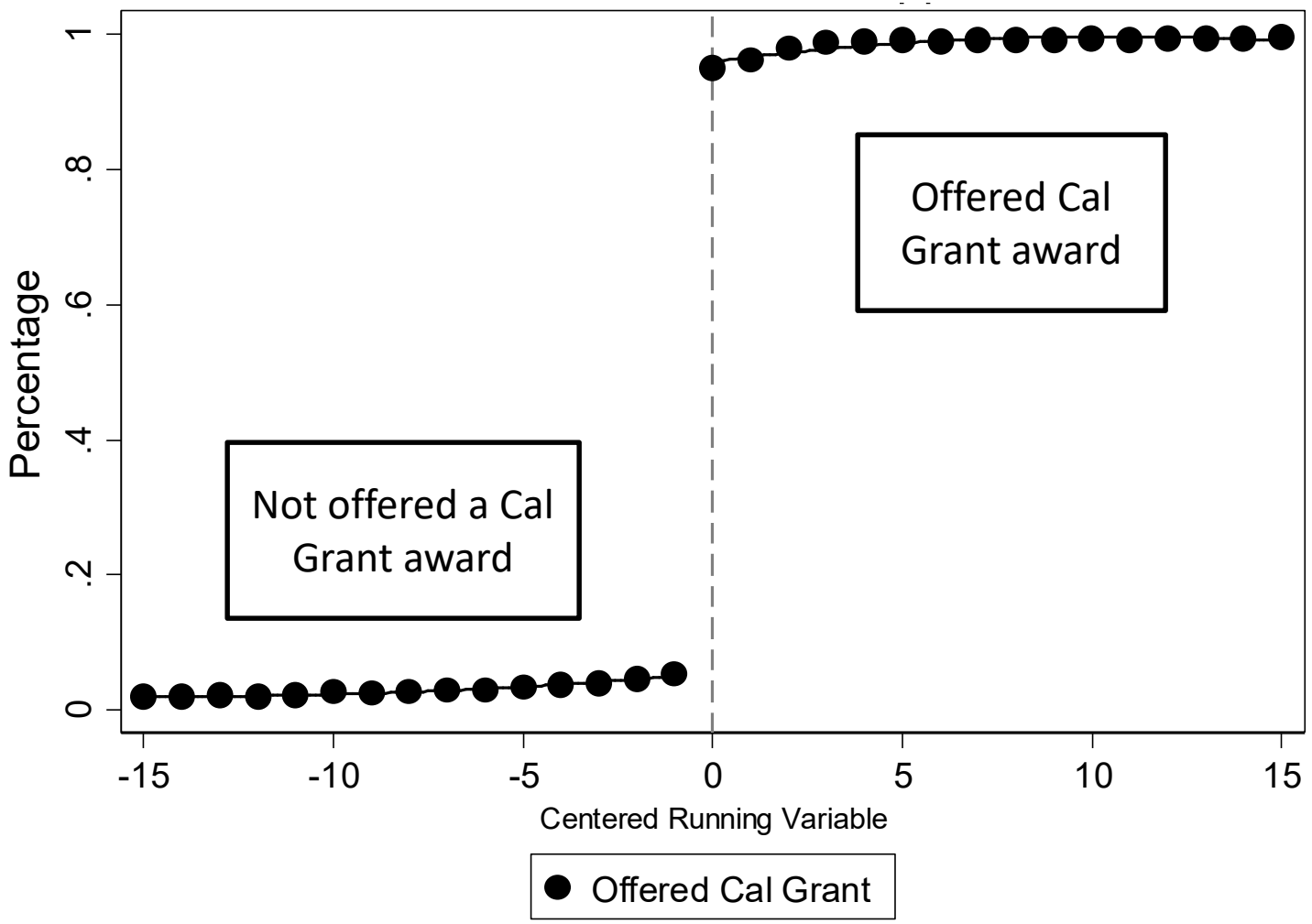








Cal Grant Offer, All Applicants



Research Design

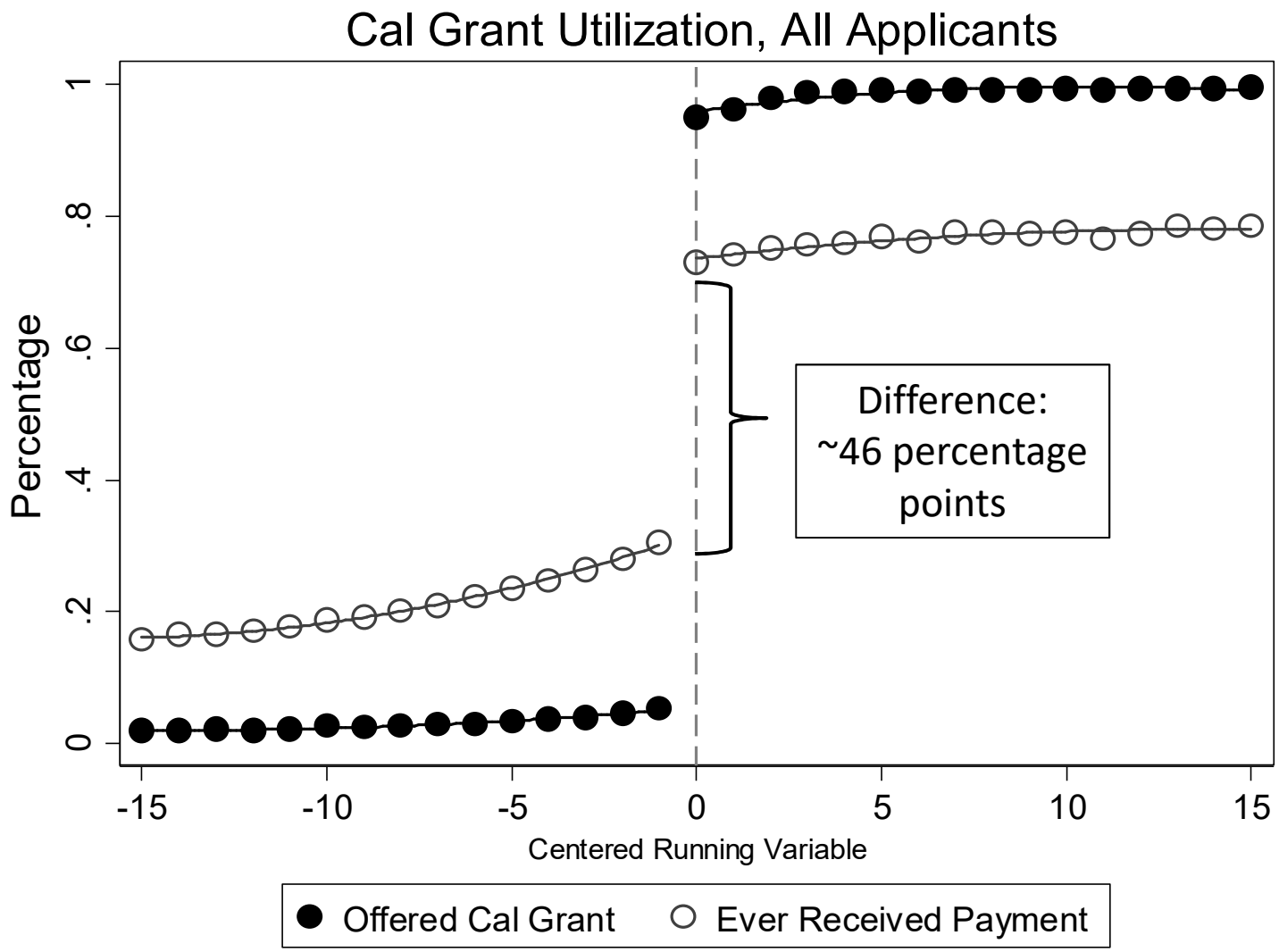
- Estimating equation for pooled results

$$Y_{igt} = \beta_0 + \beta_1 * f(score_{ig}) + \boxed{\beta_2 * CG_{igt}} + \beta_3 * CG_{igt} * f(score_{ig}) + \theta_{gt} + \varepsilon_{igt}$$

- CG_{igt}: Dummy variable for award eligibility
- θ_{gt}: Year-by-FAFSA group fixed effects
- Robust standard errors
- Optimal bandwidth: 8 points (Imbens & Kalyanaraman, 2012)
- IV analysis for award utilization

Results

- **Impact of eligibility on total aid received?**
- Does the award impact college attainment?
- Does the award impact labor force outcomes?



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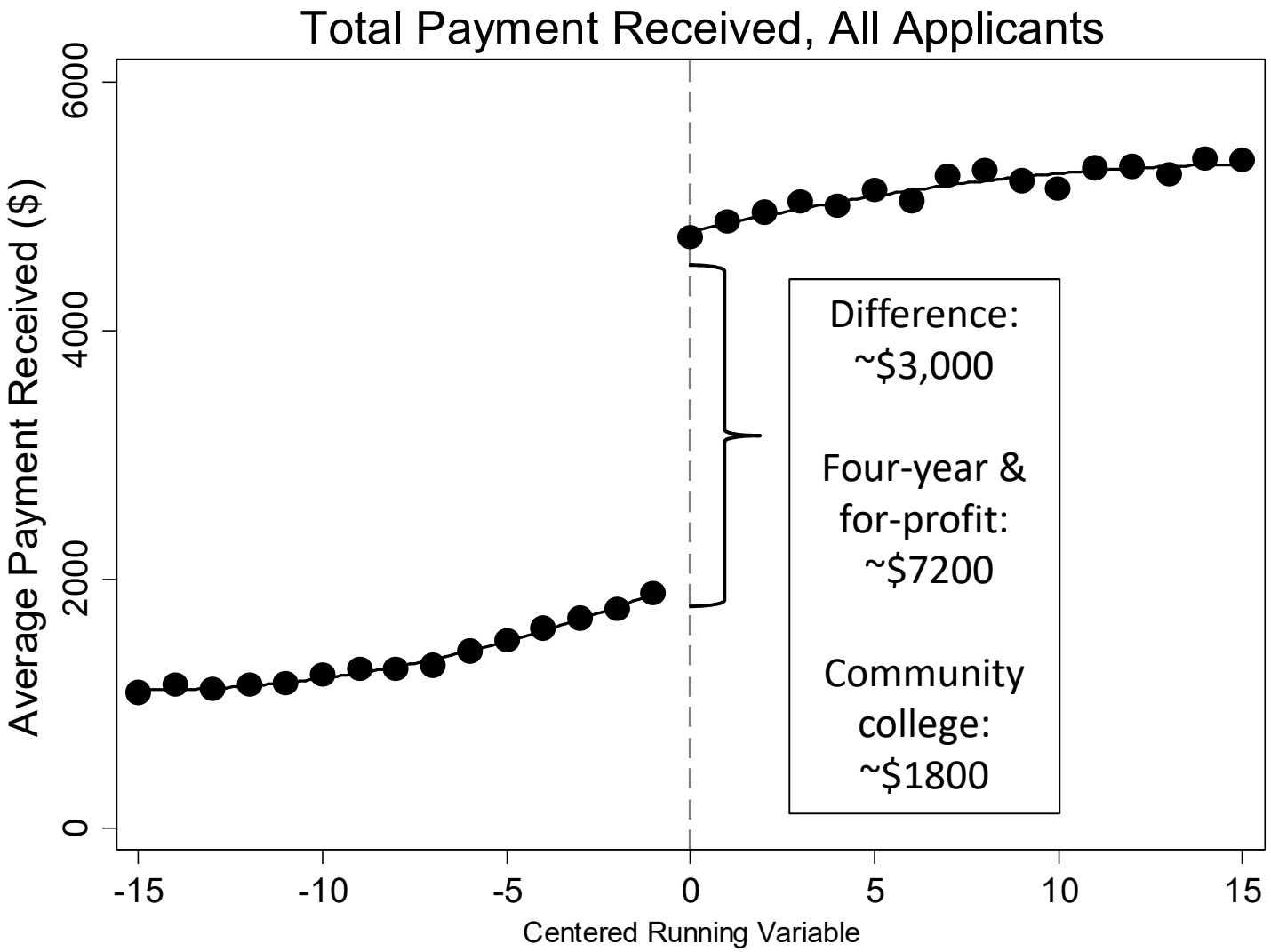

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Results

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- **Does the award impact college attainment?**
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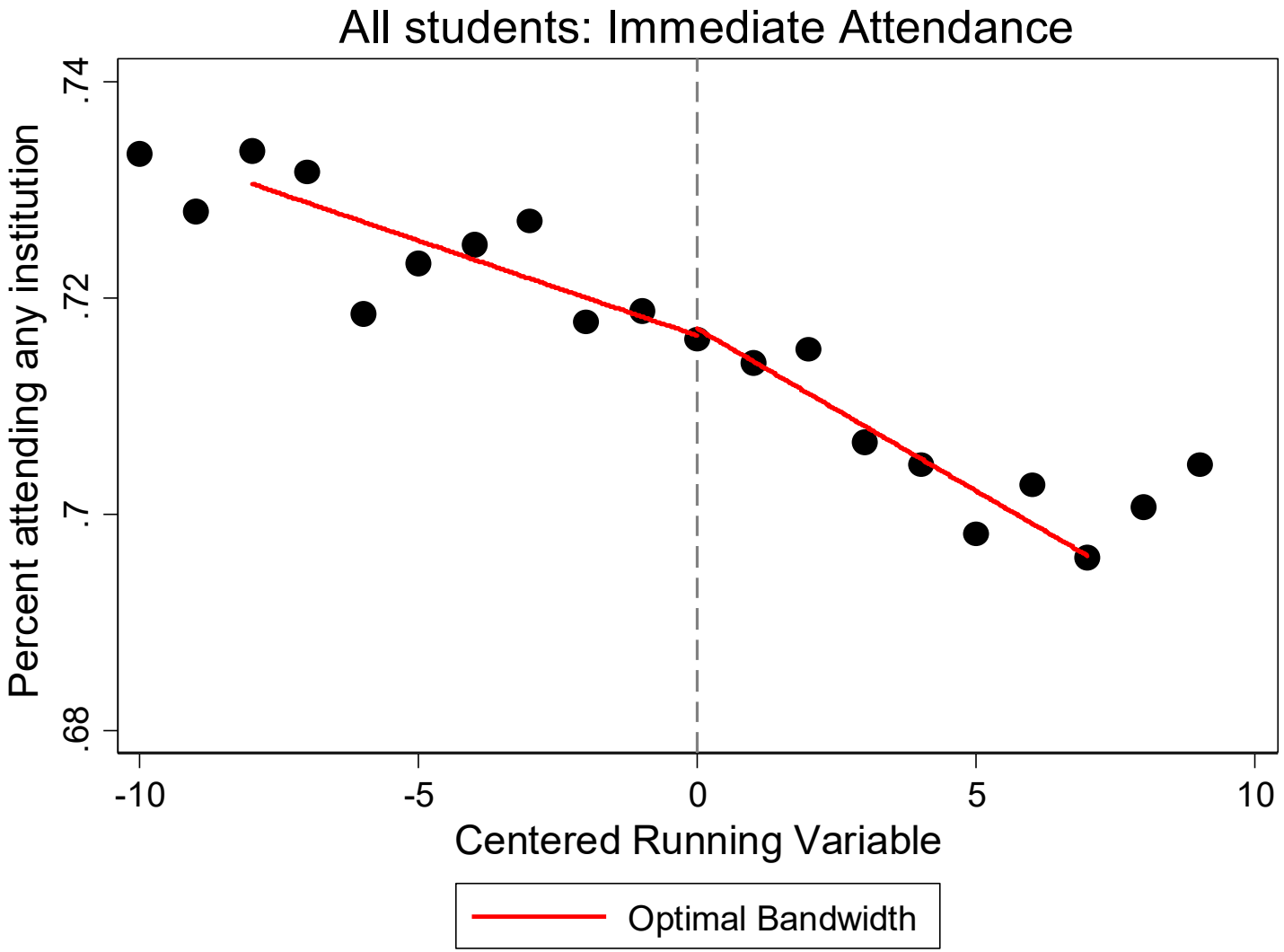

All students: Immediate Attendance
Percent attending any institution
.68
.7
.72
.74
-10
-5
0
5
10
Centered Running Variable
Optimal Bandwidth

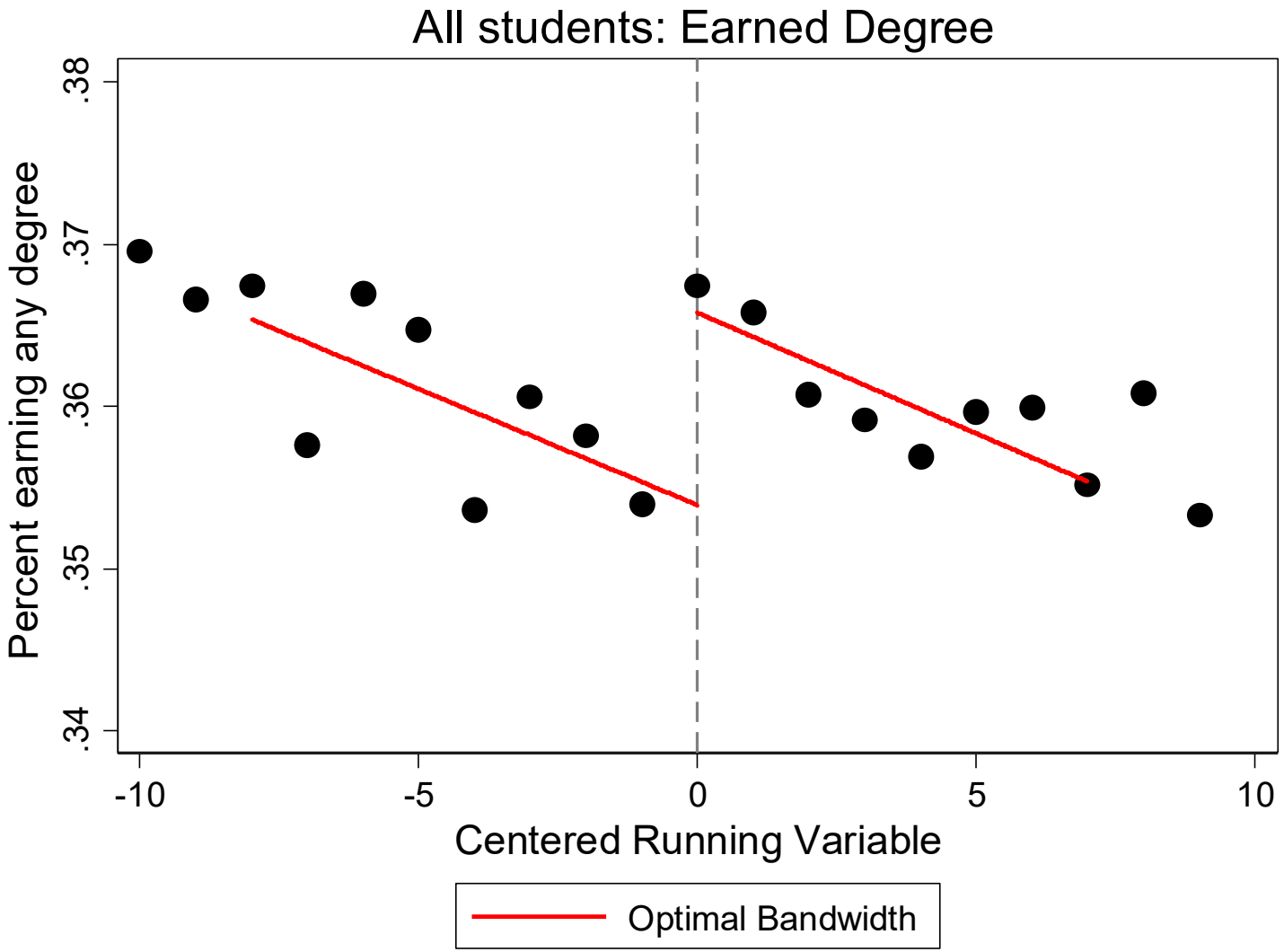

All students: Earned Degree
Percent earning any degree
.34
.35
.36
.37
.38
-10
-5
0
5
10
Centered Running Variable
Optimal Bandwidth

Table 3. Impacts of Competitive award on attendance and degree completion

	Regression estimate	Baseline rate	Percent Change
Immediately attend college	0.001 (0.004)	71.8%	0.1%
Associate degree	0.002 (0.004)	19.6%	1.0%
Bachelor degree	0.009** (0.003)	19.9%	4.5%

Notes. + p<0.1, * p<0.05, ** p<0.01. Sample includes 185,915 students.

Full results

Table 4. Impacts of Competitive award on bachelor's degree attainment, by FAFSA preferences

	N	Baseline value	Reduced Form	IV
Four-year	17639	63.4%	0.015	0.024
			(0.015)	(0.023)
For-profit	23772	22.6%	0.039**	0.086**
			(0.011)	(0.025)
March Community College	25182	13.4%	0.005	0.017
			(0.009)	(0.027)
September Community College	114136	13.4%	0.005	0.010
			(0.004)	(0.009)

Notes. + p<0.1, * p<0.05, ** p<0.01.

Table 4. Impacts of Competitive award on associate's degree attainment, by FAFSA preferences

	N	Baseline value	Reduced Form	IV
Four-year	17639	2.7%	-0.000	-0.001
			(0.004)	(0.006)
For-profit	23772	14.1%	-0.005	-0.011
			(0.009)	(0.020)
March Community College	25182	24.0%	0.014	0.043
			(0.010)	(0.032)
September Community College	114136	22.7%	-0.000	-0.000
			(0.005)	(0.010)

Notes. + p<0.1, * p<0.05, ** p<0.01.

Results: For-Profit Students

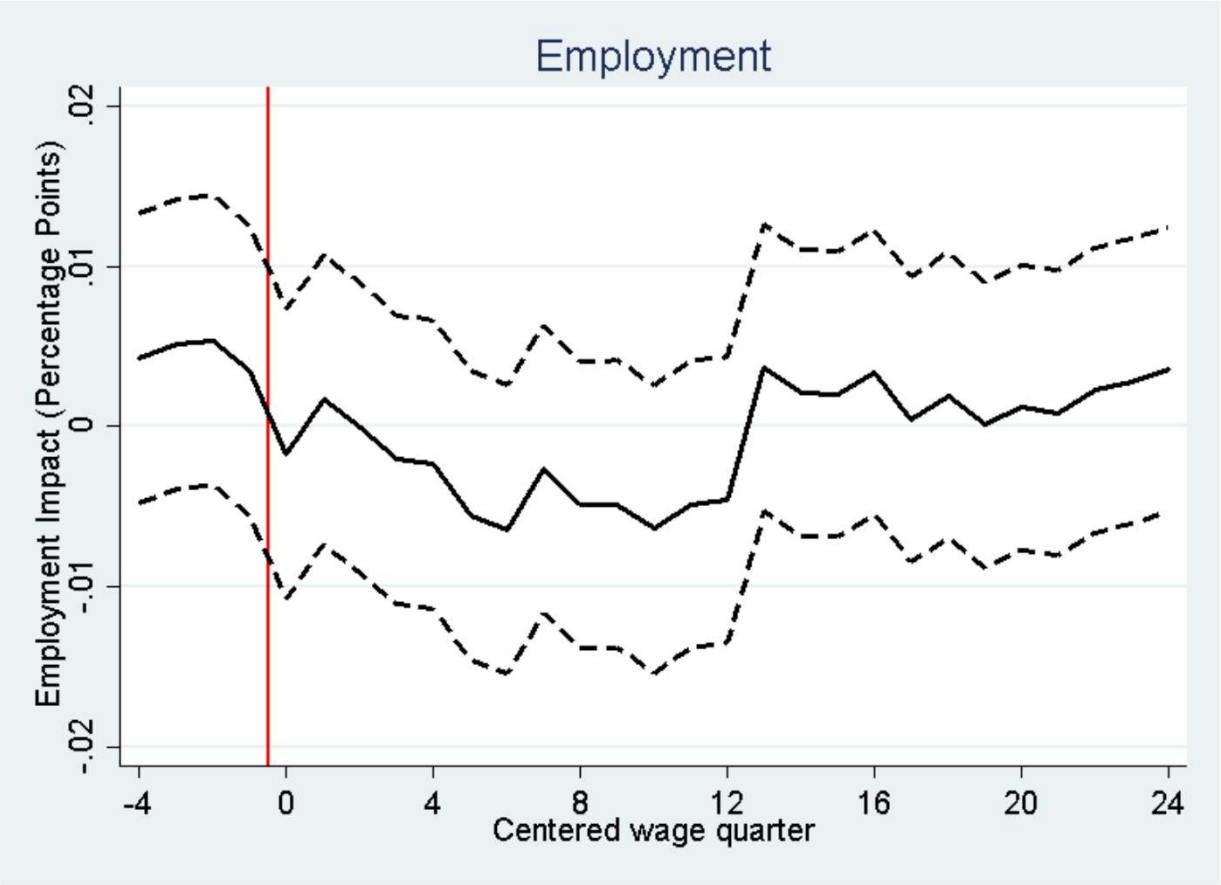
- Increases persistence into second year by 3 percentage points
- Larger impacts for students who are older, female, more college experience
- Robust to bandwidth, functional forms, kernels, covariates, non-reporting NSC schools

Results

- Impact of eligibility on total aid received?
- Does the award impact college attainment?
- **Does the award impact labor force outcomes?**
  - Estimate treatment effects for 25 quarters of UI data post initial application status

Results

- No shifts in short- or long-term employment



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Results

- No shifts in short- or long-term wages

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Results

- No large shifts in employment or wages

Table 8. Impacts on award eligibility on long-term labor force outcomes

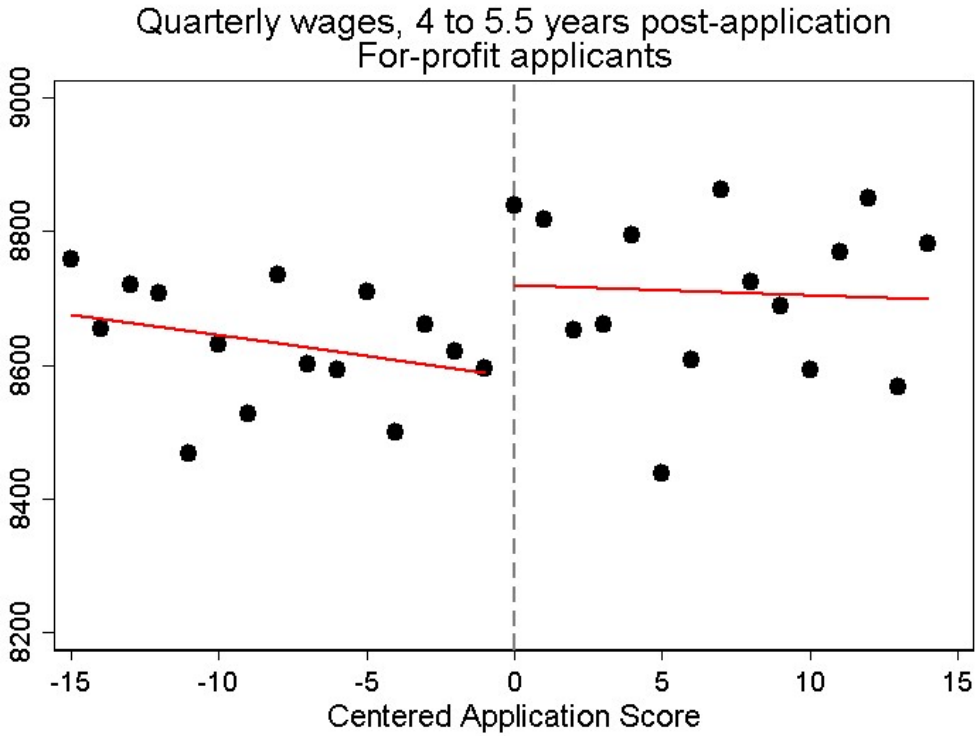
Group	Employment	Wages
Four-year	-0.2	-16
	(0.9)	(137)
(Baseline rate below estimates)	64.8%	$9,094
For-profit	0.0	142
	(0.8)	(107)
	66.1%	$8,608
Community College: March	0.5	46
	(0.8)	(108)
	56.6%	$6,899
Community College: Sept.	0.1	36
	(0.4)	(57)
	58.9%	$6,584

Notes. + p<0.1, * p<0.05, ** p<0.01. Results stack student-by-wage quarter observations for 3 to 5.5 years after initial application. Sample sizes for the four rows are 224212, 270827, 253296, and 839048 observations, respectively.

Let’s speculate about impacts on for-profit students

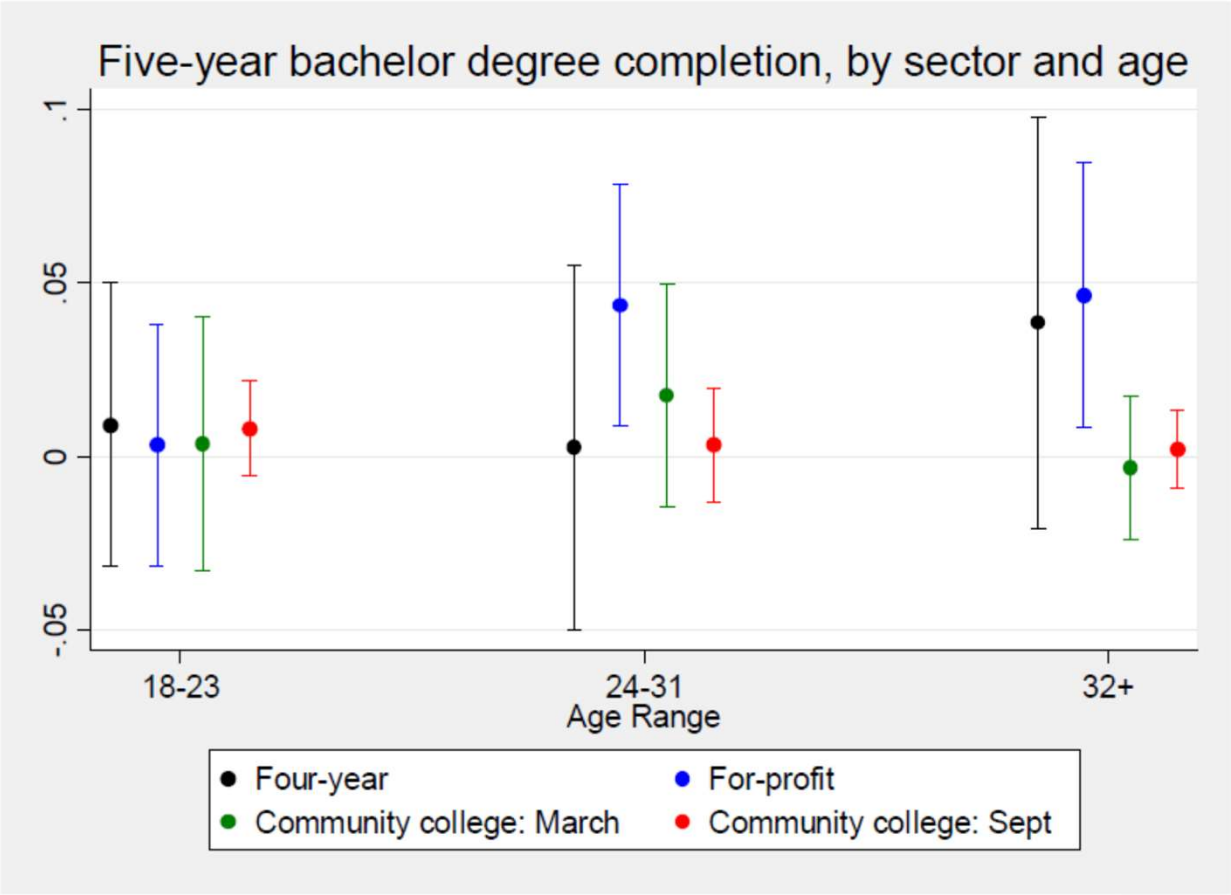
Speculation #1

- RD scatterplot suggests increase at the threshold



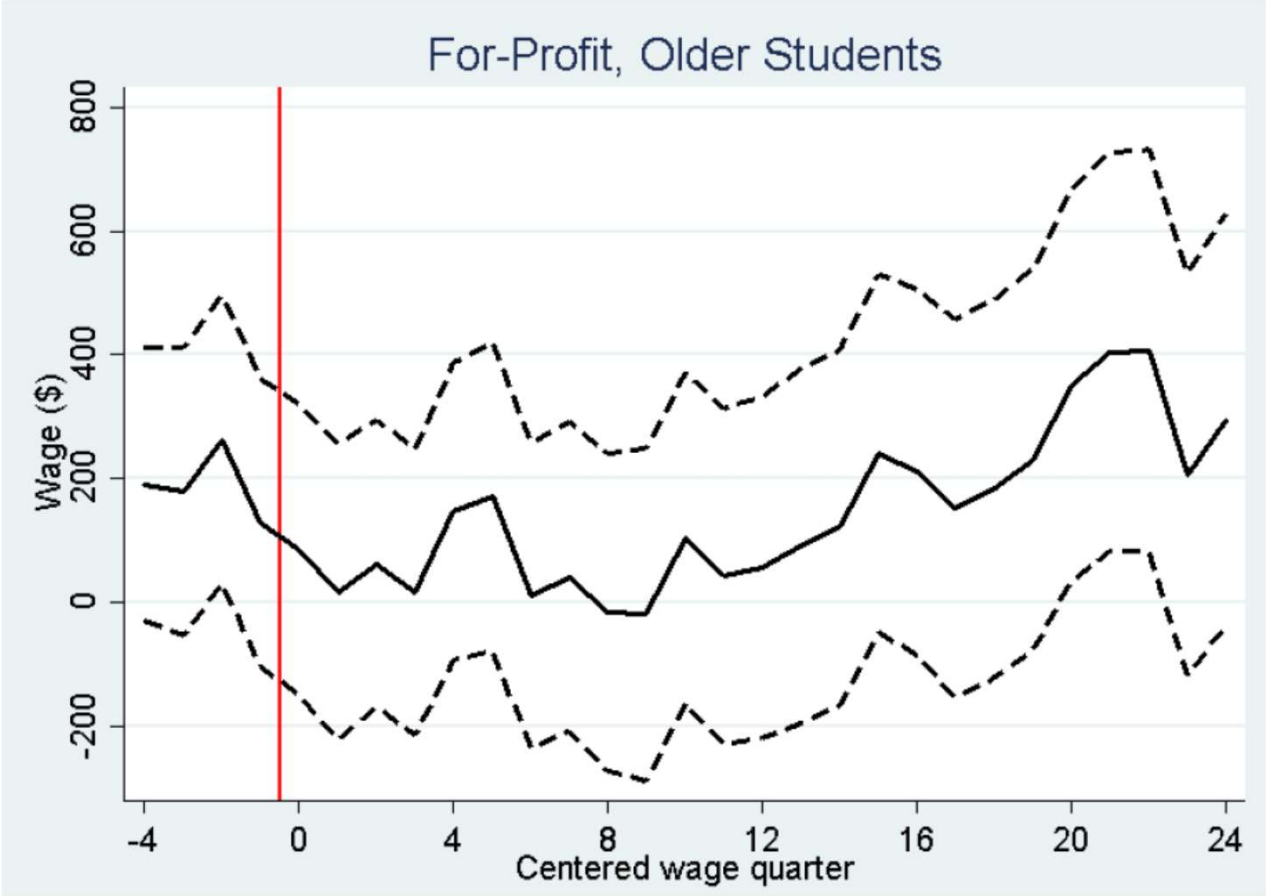
Speculation #2

- Degree impacts larger for older students



Speculation #2

- Wage impacts larger for older students



Discussion

- No impacts for majority of applicants
- For-profit colleges typically produce weaker labor market outcomes (Cellini & Chaudhary, 2014; Cellini & Turner, 2016; Darolia, et al., 2015; Deming, et al., 2016; Jepsen, Mueser, & Jeon, 2016)
- "Tinkering" unlikely to improve program design
  - Threshold identifies impacts on neediest students
  - Relatively low application barriers

Discussion

- Is the award efficient?

Cost-benefit comparison of financial aid programs

	Setting	Outcome	Cost per degree
Non-traditional			
Competitive Award	**California, Varied**	**Bachelor**	**$300,000**
"Opening Doors" (Mayer et al., 2016)	Ohio, Community college	Associate	$50,000
GI Bill Expansion (Barr, 2016)	National, Veterans	Bachelor	$100,000
Traditional			
Entitlement Award (Bettinger et al., 2016)	California	Bachelor	$150,000
Wisconsin Scholars Grant (Goldrick-Rab et al., 2016)	Wisconsin	Bachelor	$190,000
Florida Student Access Grant (Castleman & Long, 2016)	Florida	Bachelor	$30,000

Discussion

- Is the award efficient?
- Financial aid for working adults appears less efficient than for traditional students
- Unclear if state will earn a positive return on investment even for for-profit students, even under rosiest assumptions

Discussion

- Vouchers effective if individuals can assess job and educational options (Perez-Johnson, Moore, & Santillano, 2011; Schwerdt, Messer, Woessmann, & Wolter, 2012)

- Financial aid not panacea for working adults
  - May have strong ideas on why schooling matters

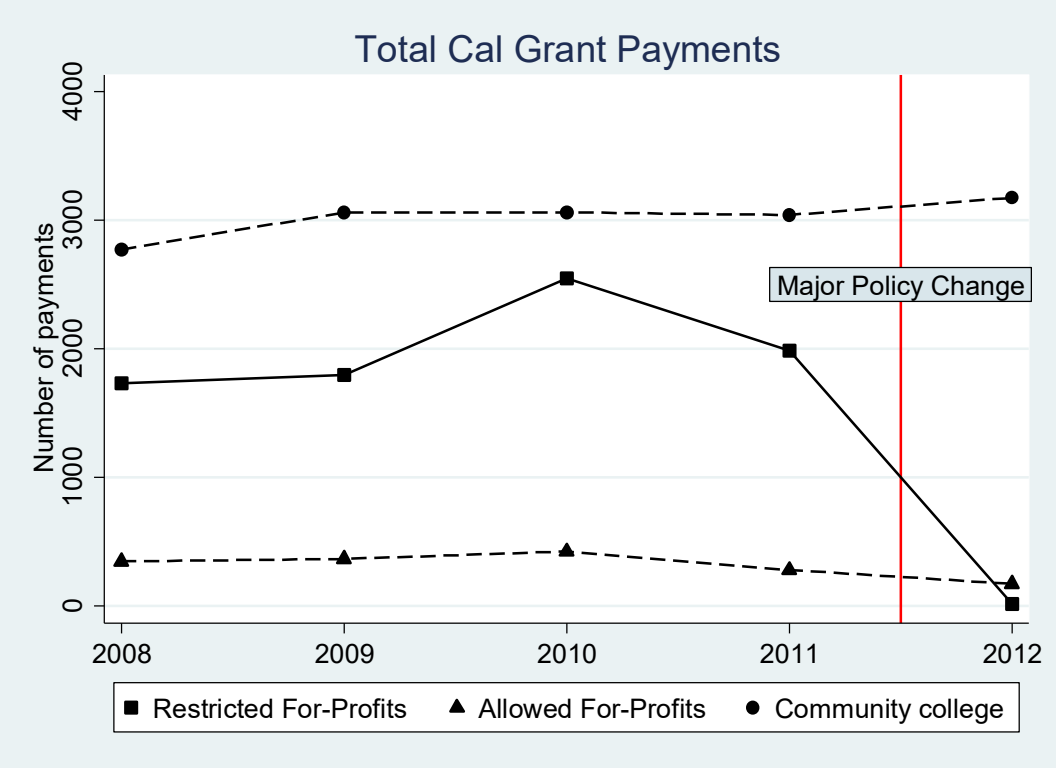
Discussion

- Could we induce for-profit students to attend alternative institutions?
  - Perhaps students interested in for-profits could be shifted towards cheaper institutions?

- Relatively inelastic preference for for-profit colleges

Does removing aid shift student behaviors?

- CSAC eliminated aid toward for-profits



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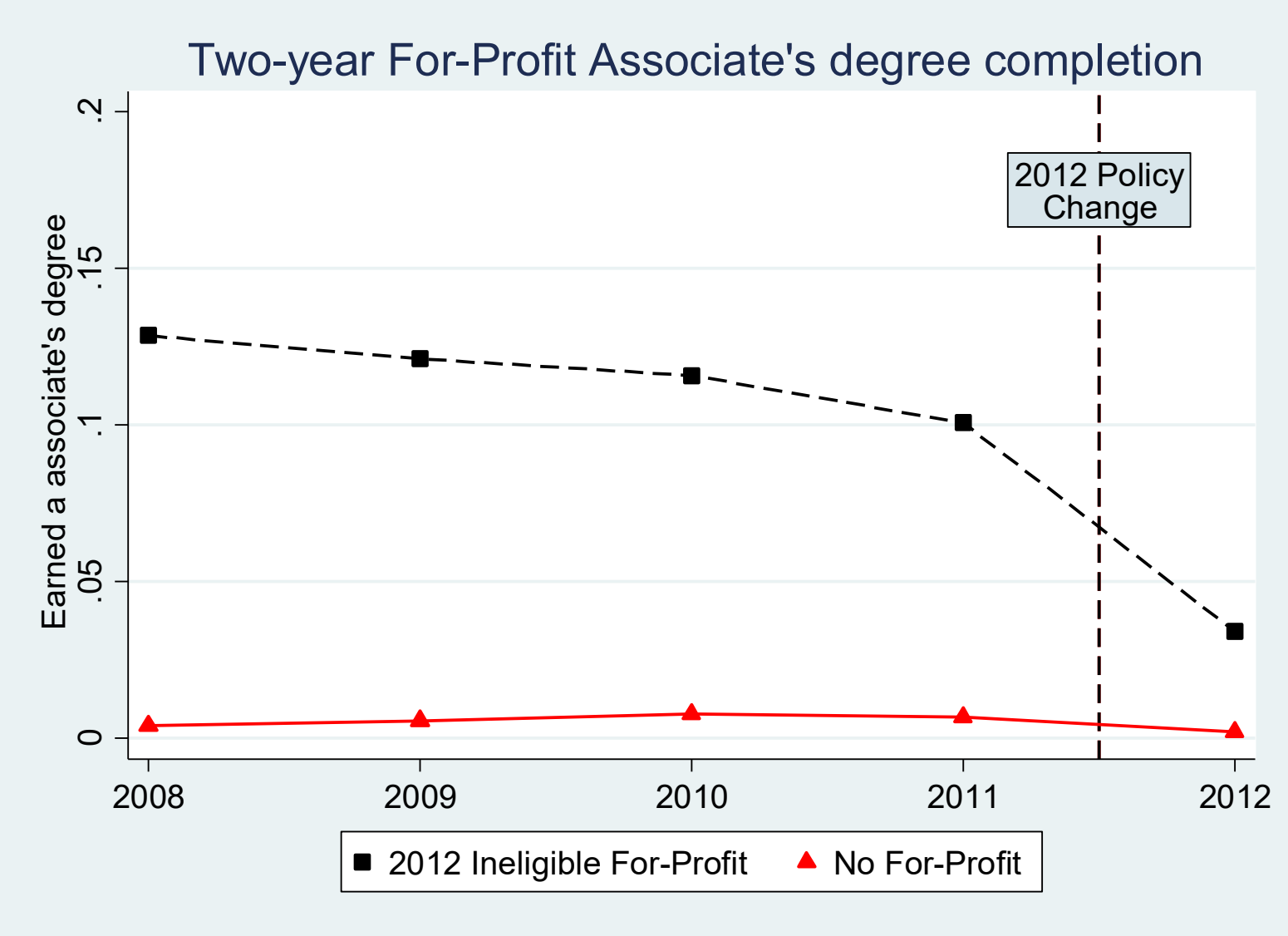
Does removing aid shift student behaviors?

Table 3. Postsecondary attendance of Traditional Students, NSC subsample

	Year 1	Year 4
For-profit	-0.094**	0.018+
	(0.013)	(0.009)
Baseline	49.0%	11.2%
Community college	0.047**	0.001
	(0.018)	(0.016)
Baseline	27.9%	23.6%
Did not attend	0.047**	-0.022
	(0.015)	(0.018)
Baseline	19.3%	55.6%
Four-year	0.004	0.000
	(0.015)	(0.015)
Baseline	10.2%	12.5%

Notes. + p<0.1 * p<0.05 ** p<0.01. All regressions are based on the subsample of 15,796 observations that has strong NSC coverage. Baseline values are means for 2010 applicants in the NSC subsample who listed any for-profit on their FAFSA.



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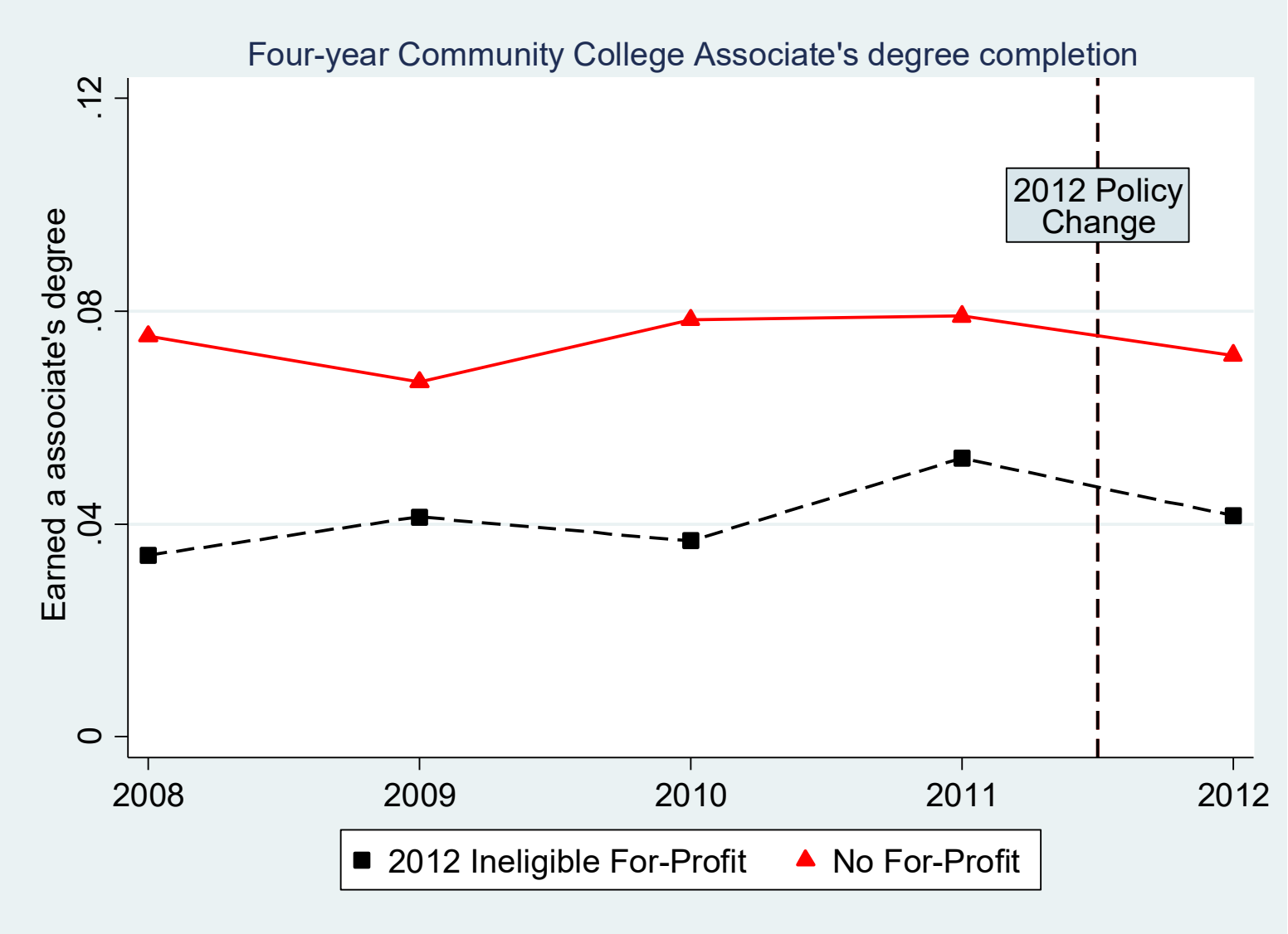

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Preliminary findings

- High school students: for-profit attendance declines, shifts into community college, degrees decline

- Non-traditional students: no shifting towards other institutions, degrees decline
  - Results differ from Cellini, et al. (2016)

Impacts of state aid for non-traditional students

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Funding support comes from the Smith-Richardson Foundation and grant #R305B090016 from the U.S. Department of Education. Special thanks to the California Student Aid Commission for making these data accessible and supporting me in pursuing this research.

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Appendix Table. Tuition at four-year public institutions

Application Year	In-State Resident Undergraduate Tuition	
	California State University (CSU)	University of California (UC)
2002	$1,428	$3,429
2003	$2,046	$4,984
2004	$2,334	$5,684
2005	$2,520	$6,141
2006	$2,520	$6,141
2007	$2,772	$6,636
2008	$3,048	$7,126
2009	$4,026	$7,788
2010	$4,230	$10,302
2011	$5,472	$12,192

Scoring: GPA

GPA	SCORE
2.00 - 2.04	30
2.05 - 2.09	31
2.10 - 2.14	32
2.15 - 2.19	33
2.20 - 2.24	34
2.25 - 2.29	35
2.30 - 2.34	36
2.35 - 2.39	37
2.40 - 2.44	38

3.70 - 3.74	64
3.75 - 3.79	65
3.80 - 3.84	66
3.85 - 3.89	67
3.90 - 3.94	68
3.95 - 3.99	69
4.00	70

Scoring: Parent Education

Some states and colleges offer aid based on the level of schooling your parents completed.

24. Highest school completed by Parent 1	Middle school/Jr. high	1	High school	2	College or beyond	3	Other/unknown	4
25. Highest school completed by Parent 2	Middle school/Jr. high	1	High school	2	College or beyond	3	Other/unknown	4

Scoring: Access Equalizer

1. The high school code on the GPA verification form is one of the following:
   * A continuation high school; or
   * A high school in the upper quartile of free or reduced lunch program; or
   * A high school in the lowest quartile of university-going rate, excluding those high schools having no reported university-going rate and those having a free or reduced lunch rate of less than 25 percent.

or

2. The student submitted a GED test score.

GPA from	Disadvantaged High School Experience	
	No	Yes
High School	0	18
Non-High School	0	See below chart

Number of Years Out of High School	Educational Level				
	No College	1	2	3	4
2-3	9	6	3	0	0
4-5	12	9	6	0	0
6-7	15	12	9	3	0
8 or more	18	15	12	6	3

Scoring: Income and Household Size

TABLE 1: DEPENDENT STUDENTS
2010-11 COMPETITIVE CAL GRANT A AND B PROGRAM
SCORING FOR FAMILY INCOME AND HOUSEHOLD SIZE

Parents' Income	Size of Household								
	10	9	8	7	6	5	4	3	2
$0 - $19,850	76	76	76	76	76	76	76	76	76
$19,851 - $21,350	76	76	76	76	76	76	76	76	75
$21,351 - $22,850	76	76	76	76	76	76	76	76	74
$22,851 - $24,350	76	76	76	76	76	76	76	76	73
$24,351 - $25,850	76	76	76	76	76	76	76	75	71
$25,851 - $27,350	76	76	76	76	76	76	76	74	70
$27,351 - $28,850	76	76	76	76	76	76	76	73	69
$28,851 - $30,350	76	76	76	76	76	76	76	71	67
$30,351 - $31,850	76	76	76	76	76	76	75	70	66
$31,851 - $33,350	76	76	76	76	76	76	74	68	65
$33,351 - $34,850	76	76	76	76	76	76	72	67	64
$34,851 - $36,350	76	76	76	76	76	75	71	66	63
$36,351 - $37,850	76	76	76	76	76	74	70	65	62
$37,851 - $39,350	76	76	76	76	76	73	68	64	61
$39,351 - $40,850	76	76	76	76	76	72	67	63	60
$40,851 - $42,350	76	76	76	76	75	70	66	61	58
$42,351 - $43,850	76	76	76	76	74	69	65	60	57
$43,851 - $45,350	76	76	76	76	73	68	64	59	56
$45,351 - $46,850	76	76	76	76	72	67	63	58	55
$46,851 - $48,350	76	76	76	75	71	66	61	57	54
$48,351 - $49,850	76	76	76	74	69	65	60	56	52
$49,851 - $51,350	76	76	76	72	68	63	59	54	51
$51,351 - $52,850	76	76	75	71	67	62	58	53	49
$52,851 - $54,350	76	76	74	70	66	61	57	52	48
$54,351 - $55,850	76	76	73	68	65	60	56	50	46
$55,851 - $57,350	76	75	71	67	64	59	54	49	45
$57,351 - $58,850	76	74	70	66	63	58	53	47	43
$58,851 - $60,350	76	73	69	65	62	57	52	46	41
$60,351 - $61,850	75	71	68	64	60	56	50	44	40
$61,851 - $63,350	74	70	66	63	59	54	49	42	38
$63,351 - $64,850	73	69	65	62	58	53	48	41	37
$64,851 - $66,350	71	68	64	61	57	52	46	39	34
$66,351 - $67,850	70	67	63	60	56	50	44	37	32
$67,851 - $69,350	69	66	62	58	55	49	42	35	30
$69,351 - $70,850	68	64	61	57	53	47	41	32	29
$70,851 - $72,350	67	63	60	56	52	46	39	30	28
$72,351 - $73,850	66	62	59	55	51	44	37	29	
$73,851 - $75,350	65	61	58	54	49	42	35		
$75,351 - $76,850	64	60	56	52	48	40	33		
$76,851 - $78,350	62	59	55	51	46	38	30		
$78,351 - $79,850	61	58	54	49	44	36	29		
$79,851 - $81,350	60	57	53	48	43	34	28		
$81,351 - $82,850	59	55	51	46	41	32			
$82,851 - $84,350	58	54	50	45	39	30			
$84,351 - $85,850	57	53	48	43	37	29			
$85,851 - $87,350	56	52	47	41	35	28			
$87,351 - $88,850	54	50	45	39	33				
$88,851 - $90,350	53	49	43	37	30				
$90,351 - $91,850	52	47	42	35	29				
$91,851 - $93,350	50	45	40	33	28				

Ineligible

TABLE 3: SINGLE INDEPENDENT AND MARRIED STUDENTS
2010-11 COMPETITIVE CAL GRANT A AND B PROGRAM
SCORING FOR FAMILY INCOME AND HOUSEHOLD SIZE

Without Dependents Other Than Spouse		
Student/Spouse Income	Married Couple	Single
$0 - $8,910	72	72
$8,911 - $9,480	72	71
$9,481 - $10,050	72	70
$10,051 - $10,620	72	69
$10,621 - $11,190	72	68
$11,191 - $11,760	72	66
$11,761 - $12,330	72	65
$12,331 - $12,900	72	64
$12,901 - $13,470	72	63
$13,471 - $14,040	72	62
$14,041 - $14,610	72	61
$14,611 - $15,180	72	60
$15,181 - $15,750	72	59
$15,751 - $16,320	72	58
$16,321 - $16,890	72	57
$16,891 - $17,460	72	56
$17,461 - $18,030	72	55
$18,031 - $18,600	71	54
$18,601 - $19,170	70	53
$19,171 - $19,740	69	52
$19,741 - $20,310	68	51
$20,311 - $20,880	67	50
$20,881 - $21,450	66	49
$21,451 - $22,020	65	48
$22,021 - $22,590	64	47
$22,591 - $23,160	63	46
$23,161 - $23,730	62	45
$23,731 - $24,300	60	44
$24,301 - $24,870	59	43
$24,871 - $25,440	58	41
$25,441 - $26,010	57	40
$26,011 - $26,580	56	39
$26,581 - $27,150	55	38
$27,151 - $27,720	54	37
$27,721 - $28,290	53	36
$28,291 - $28,860	52	35
$28,861 - $29,430	51	34
$29,431 - $30,000	50	
$30,001 - $30,570	49	
$30,571 - $31,140	47	
$31,141 - $31,710	46	
$31,711 - $32,280	45	
$32,281 - $32,850	44	
$32,851 - $33,420	43	
$33,421 - $33,990	42	

Ineligible

Appendix Table 1. Competitive award income limits

		Independent		
	Dependent	With Dependents	Single, No Dependent	Married, No Dependent
2002	$76,500	$76,500	$27,800	$24,700
2003	$77,100	$77,100	$28,180	$24,680
2004	$78,100	$78,100	$28,300	$24,800
2005	$80,400	$80,400	$29,200	$26,070
2006	$83,600	$83,600	$30,385	$26,605
2007	$85,100	$85,400	$31,150	$26,830
2008	$89,500	$88,970	$32,205	$28,215
2009	$92,100	$92,125	$33,665	$29,675
2010	$93,350	$93,500	$33,990	$29,430
2011	$91,575	$91,185	$33,245	$29,085

Notes. Income limits for dependents and independents with dependents refers to families with six or more students. Income limits generally decline by about $5,000 per family member, and income limits for families of two individuals are generally $20,000 lower.

Table 1. Descriptive Statistics, First-time Competitive award applicants, 2002-2011

	(1)	(2)	(3)	(4)
Application cycle	March	March	March	September
FAFSA type	Four-year	For-profit	CC	CC
Years	2002-2011	2002-2011	2006-2011	2002-2011
N	143,329	87,132	106,991	545,576
College educated parent	55%	38%	36%	37%
Dependent	44%	18%	33%	43%
Age	26	30	29	27
FAFSA educational background				
No college experience	1%	9%	4%	12%
First or second year	12%	66%	76%	70%
Third or fourth year	86%	24%	20%	17%

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Competitive Cal Grant

Student 1

- 3.0 GPA; $35,000 AGI
- Independent, no kids
- Both parents college-educated
- Four years out of HS
- Sophomore status

Competitive score = 119

Student 2

- 3.7 GPA; $20,000 AGI
- Independent, one kid
- Both parents high school graduates
- Eight years out of HS
- Freshman status

Competitive score = 183

Cal Grant GPA Verification Form

DEADLINE: MARCH 2, 2016 (POSTMARKED)

For 2016-17 Academic Year

DO NOT SEND ACADEMIC TRANSCRIPTS

(SEE BACK OF FORM FOR INSTRUCTIONS)

CALIFORNIA STUDENT AID COMMISSION

TO BE FILLED OUT BY STUDENT
Please print clearly using *blue* or *black* ink only.

1. Your Social Security number or Dream Act ID number:

   Re-enter your Social Security or Dream Act ID number:

2. Month/year of high school graduation (If currently a HS senior, anticipated date)

3. Your name — last, first, middle initial, as it is listed on your Social Security card and FAFSA:

4. Your date of birth:

5. Telephone number: ( ) -

6. Your permanent mailing address:

7. Your e-mail address, if available:

8. Fill in bubble if you are submitting a SAT, ACT, GED, TASC or HiSET test score instead of a GPA. ⬭
   Attach your applicable test score to this form, transcripts will not be accepted. You do not have to have your school fill out the FOR SCHOOL USE ONLY section

CSAC USE ONLY

9. **STUDENT CERTIFICATION:** I have read the instructions and information accompanying this form. I understand that this Cal Grant GPA Verification Form is used to determine Cal Grant eligibility and the GPA must be calculated as described on the attached GPA Calculation Instruction sheet. The information I have completed is true to the best of my knowledge, and I understand that it is illegal to report false or misleading information. I understand that without a valid Social Security number and signature, this form will not be considered.
   I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

▶ _____ _____
Student Signature Date

FOR SCHOOL USE ONLY (High schools MUST be fully accredited by the Western Association of Schools and Colleges [WASC] or an equivalent regional accreditation agency to certify a Cal Grant high school GPA)

STATEWIDE STUDENT ID (SSID) :

GPA VERIFIER'S SCHOOL CODE:

GPA IS BASED ON HIGH SCHOOL COURSEWORK? ⬭

CALIFORNIA COMMUNITY COLLEGE REESTABLISHED GPA? ⬭

. GPA CANNOT BE ABOVE 4.00

The signature of the high school or college official certifies, under penalty of perjury, that the GPA is calculated as described on the attached GPA Calculation Instruction sheet. The signature of a high school official also certifies that his or her high school is fully accredited by the WASC or other regional accrediting agency, or has a UC-approved course list as required by California regulations. I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

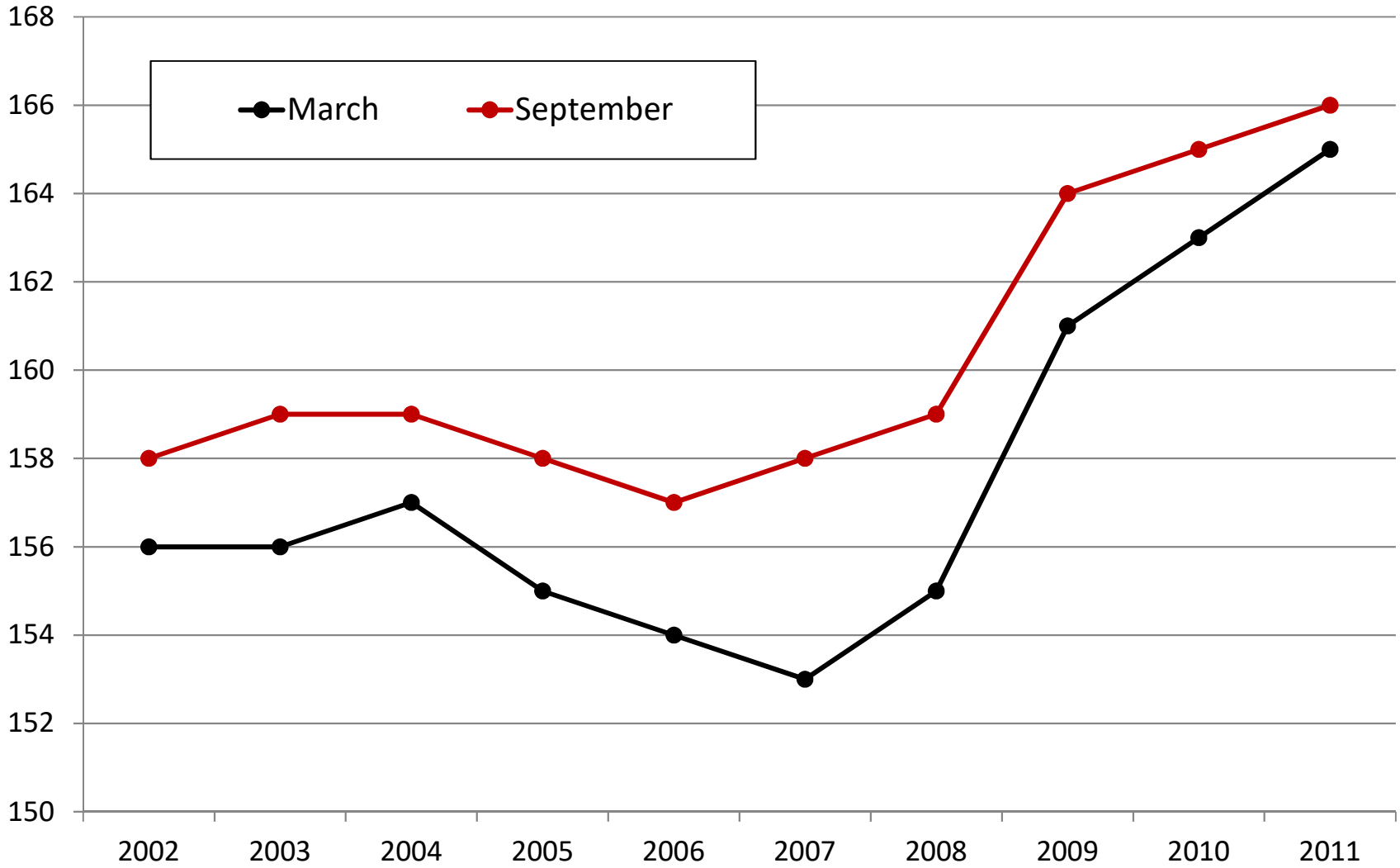
▶ _____ _____
Signature of School Official Name of School

_____ _____
Title of School Official Street Address of School

_____ _____ _____ _____ _____
Date E-mail Address City State Zip Code

Mail completed form to: California Student Aid Commission, Cal Grant Operations, P.O. Box 419077, Rancho Cordova, CA 95741-9077

Competitive award eligibility scores, 2002-2011



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Appendix Table 2. Covariate Balance at Competitive award eligibility threshold

	(1)	(2)	(3)	(4)	(5)
Application cycle	All	March	March	All	September
FAFSA type	All	Four-year	For-profit	CC	CC
Years	2002-2011	2002-2011	2002-2011	2006-2011	2002-2011
N	185915	17639	23772	25182	114136
Family Size	0.018	0.027	0.036	0.005	0.014
	(0.014)	(0.045)	(0.040)	(0.040)	(0.018)
College educated parent	-0.001	0.027+	0.018	-0.010	-0.007
	(0.004)	(0.014)	(0.012)	(0.011)	(0.005)
Female	0.006	0.006	0.013	0.004	0.005
	(0.004)	(0.015)	(0.013)	(0.012)	(0.006)
Age	-0.107	-0.376	0.420+	0.014	-0.148
	(0.091)	(0.263)	(0.227)	(0.269)	(0.119)
Dependent	0.002	0.019	-0.005	0.012	-0.001
	(0.004)	(0.015)	(0.010)	(0.011)	(0.006)
Student GPA	-0.002	-0.021	-0.013	-0.007	-0.002
	(0.007)	(0.016)	(0.015)	(0.013)	(0.011)
Total Income	189.123	-248.801	276.163	282.075	209.745
	(120.069)	(411.481)	(369.580)	(325.400)	(149.099)

Notes. + p<0.1, * p<0.05, ** p<0.01. Coefficients are treatment effects at the eligibility threshold pooled across the years listed in the column heading, as estimated by equation (1). All results use local linear regressions that include all observations within the optimal bandwidth of eight points of the eligiblity threshold.

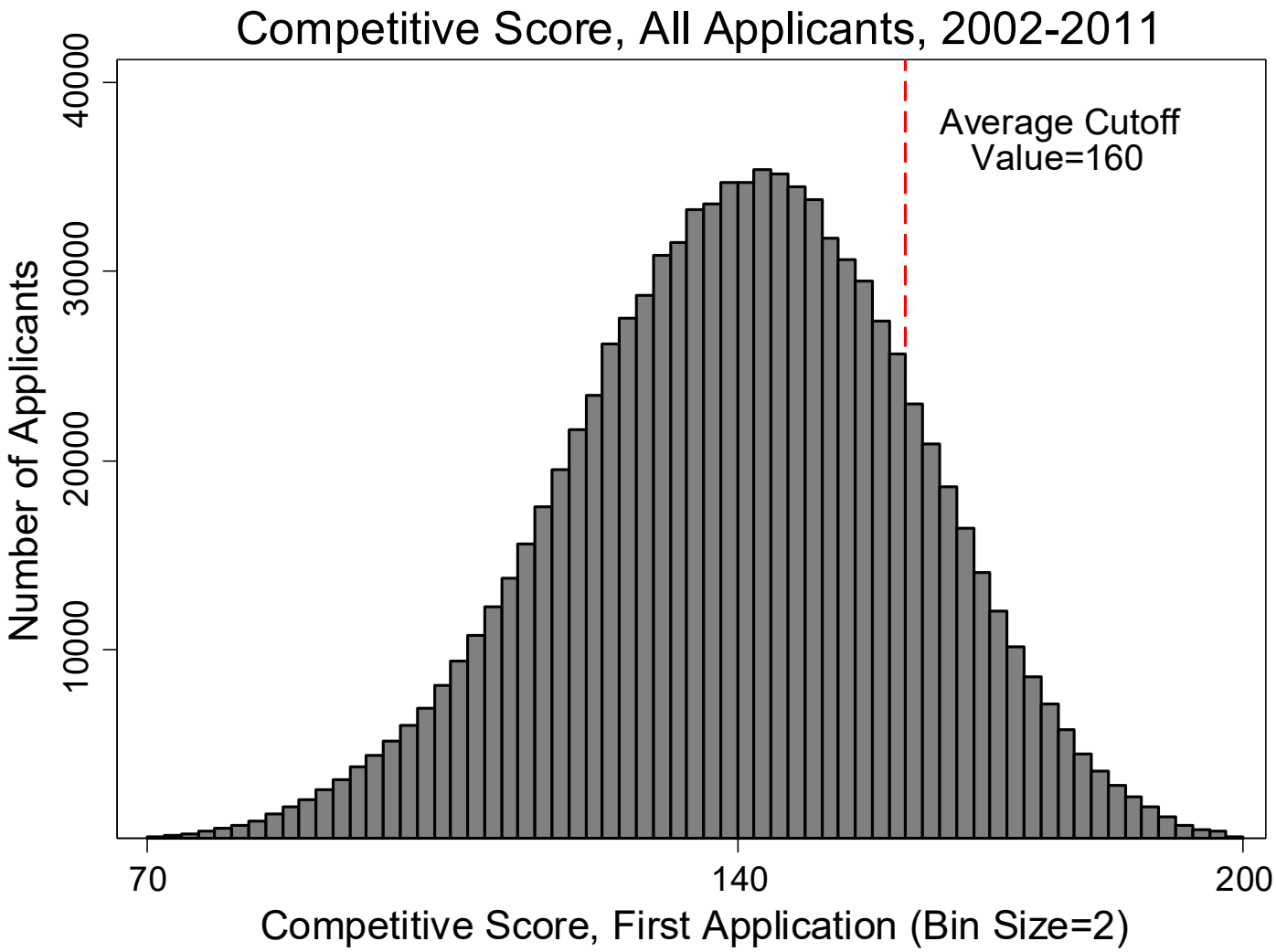

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Table 2. First-Stage impacts of Competitive award eligibility on program take-up

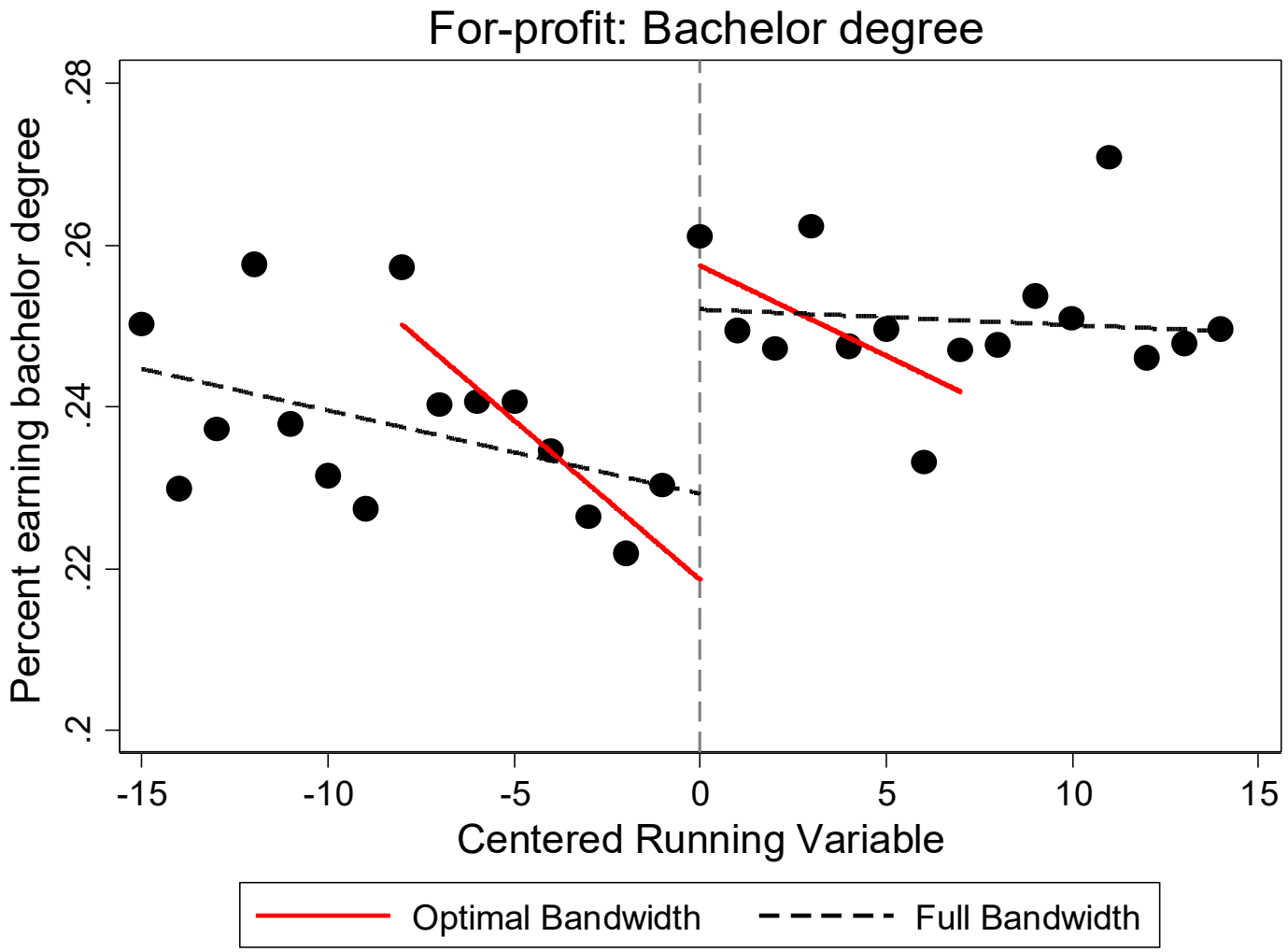
	(1)	(2)	(3)	(4)	(5)
Application cycle	All	March	March	March	September
FAFSA type	All	Four-year	For-profit	CC	CC
Years	2002-2011	2002-2011	2002-2011	2006-2011	2002-2011
N	185915	17639	23772	25182	114136
Offered Cal Grant A or B	0.933**	0.931**	0.844**	0.751**	0.995**
	(0.002)	(0.005)	(0.007)	(0.008)	(0.001)
(Baseline rate below estimates)	4.2%	1.3%	14.1%	15.5%	0.1%
Received Cal Grant payment in first year	0.637**	0.759**	0.509**	0.454**	0.695**
	(0.003)	(0.009)	(0.011)	(0.010)	(0.004)
	3.7%	1.1%	13.7%	13.2%	0.0%
Total grant aid: first year	1713.8**	4459.0**	4719.6**	642.6**	879.7**
	(15.9)	(79.3)	(91.6)	(15.7)	(6.6)
	$64	$31	$336	$120	$1
Ever received Cal Grant payment	0.462**	0.630**	0.453**	0.320**	0.475**
	(0.004)	(0.011)	(0.011)	(0.012)	(0.005)
	27.0%	16.7%	22.5%	36.1%	27.6%
Total grant aid: all years	3059.7**	7221.7**	7237.1**	1469.2**	1831.2**
	(54.7)	(189.1)	(177.9)	(153.5)	(64.3)
	$1,793	$1,230	$1,211	$2,323	$1,866

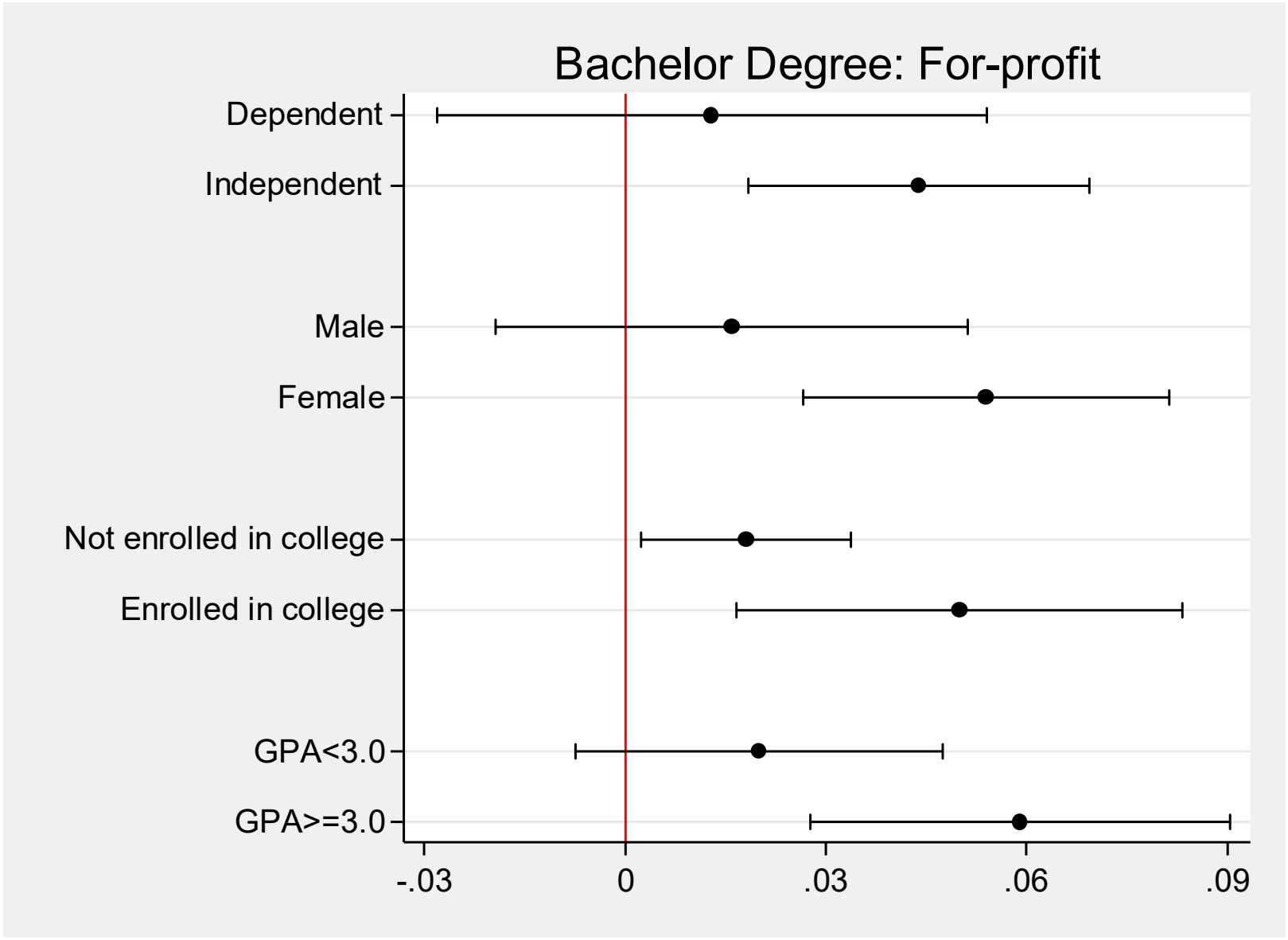
Notes. + p<0.1, * p<0.05, ** p<0.01. Coefficients are treatment effects at the eligibility threshold pooled across years, as estimated by equation (1). All results use local linear regressions that include all observations within the optimal bandwidth of eight points of the eligiblity threshold. Robust standard errors in parentheses. Baseline rates include all observations one or two points below the eligiblity threshold.

Appendix Table 3. Impacts of Competitive award on attendance and degree completion

	(1)	(2)	(3)	(4)	(5)
Application cycle	All	March	March	March	September
FASFA type	All	Four-year	For-profit	CC	CC
N	185915	17639	23772	25182	114136
Immediate attendance					
Attend	0.001	0.005	0.009	0.009	-0.004
	(0.004)	(0.013)	(0.013)	(0.012)	(0.005)
CA community college	-0.001	0.001	-0.004	0.013	-0.003
	(0.004)	(0.010)	(0.006)	(0.012)	(0.005)
CA four-year public or non-profit	0.000	0.008	0.002	-0.003	-0.000
	(0.002)	(0.013)	(0.002)	(0.004)	(0.002)
For-profit	0.003	0.000	0.008	0.000	0.001
	(0.002)	(0.002)	(0.013)	(0.002)	(0.001)
All other schools	0.001	0.003	0.002	-0.001	0.001
	(0.001)	(0.003)	(0.002)	(0.002)	(0.001)
Ever attend					
Attend	0.004	0.000	0.001	0.022*	0.002
	(0.003)	(0.010)	(0.013)	(0.010)	(0.004)
CA community college	-0.001	0.007	-0.020+	0.017	0.000
	(0.004)	(0.014)	(0.010)	(0.011)	(0.005)
CA four-year public or non-profit	0.009*	0.008	0.010+	0.007	0.010+
	(0.004)	(0.012)	(0.006)	(0.011)	(0.005)
For-profit	0.002	-0.003	0.015	-0.001	-0.000
	(0.003)	(0.006)	(0.013)	(0.006)	(0.003)
All other schools	-0.000	0.006	-0.001	-0.006	0.001
	(0.002)	(0.008)	(0.005)	(0.006)	(0.003)

Notes. + p<0.1, * p<0.05, ** p<0.01. Coefficients are treatment effects at the eligibility threshold pooled across years, as estimated by equation (1). All regressions run linear specification that include all observations within 15 points of the eligiblity threshold. Robust standard errors in parentheses.


For-profit: Bachelor degree
Percent earning bachelor degree
.2
.22
.24
.26
.28
-15
-10
-5
0
5
10
15
Centered Running Variable
Optimal Bandwidth
Full Bandwidth



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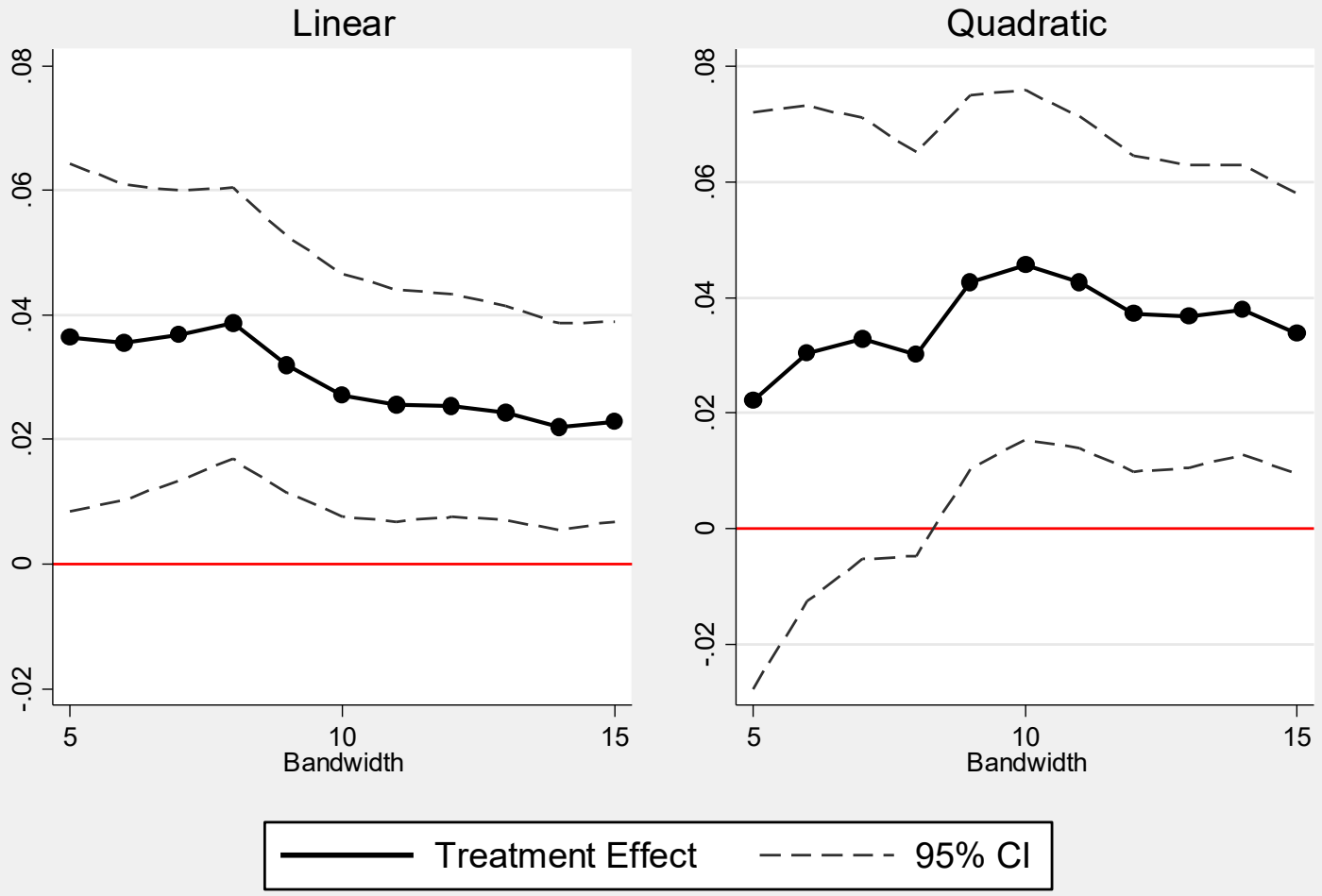
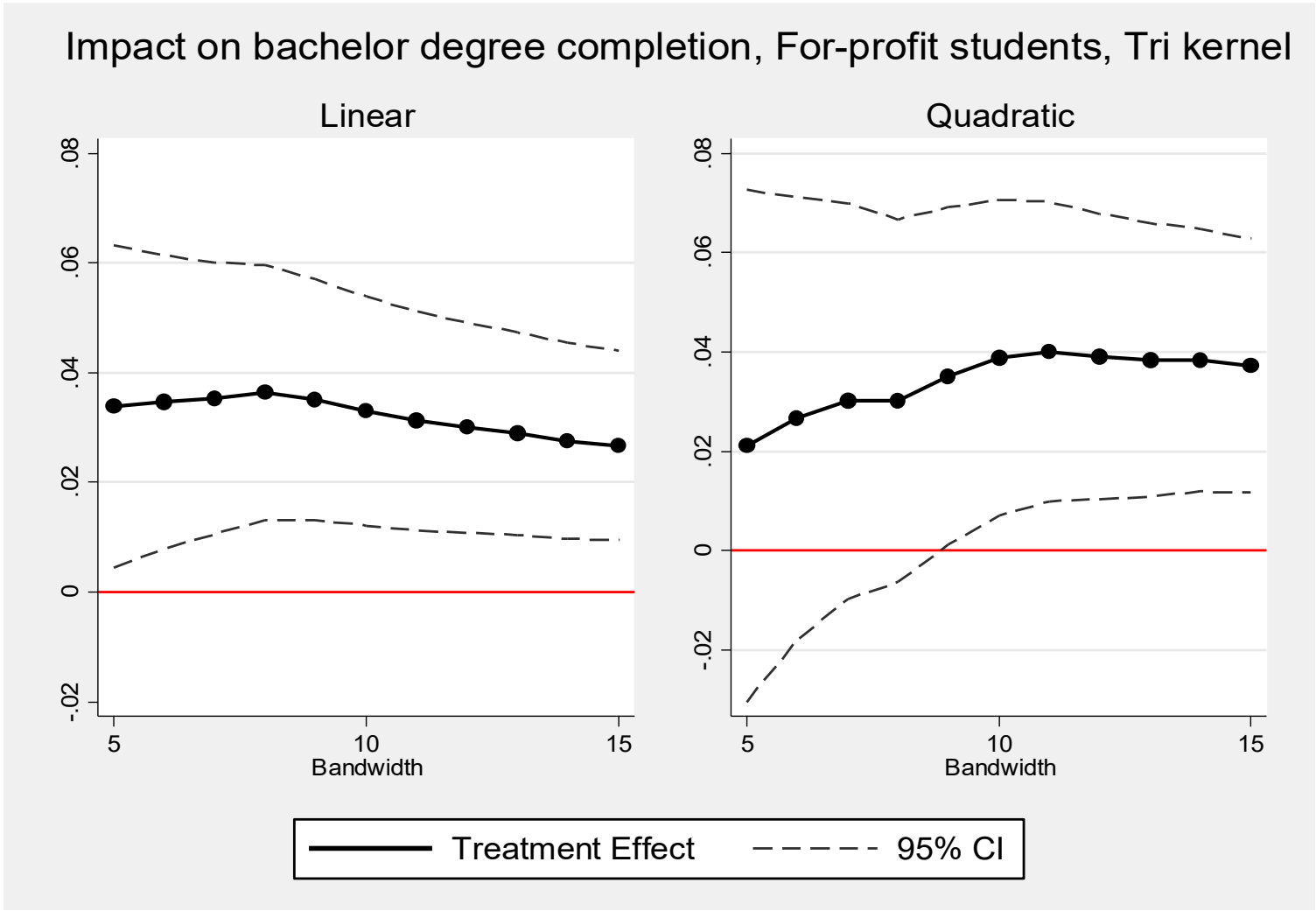
Impact on bachelor degree completion, For-profit students



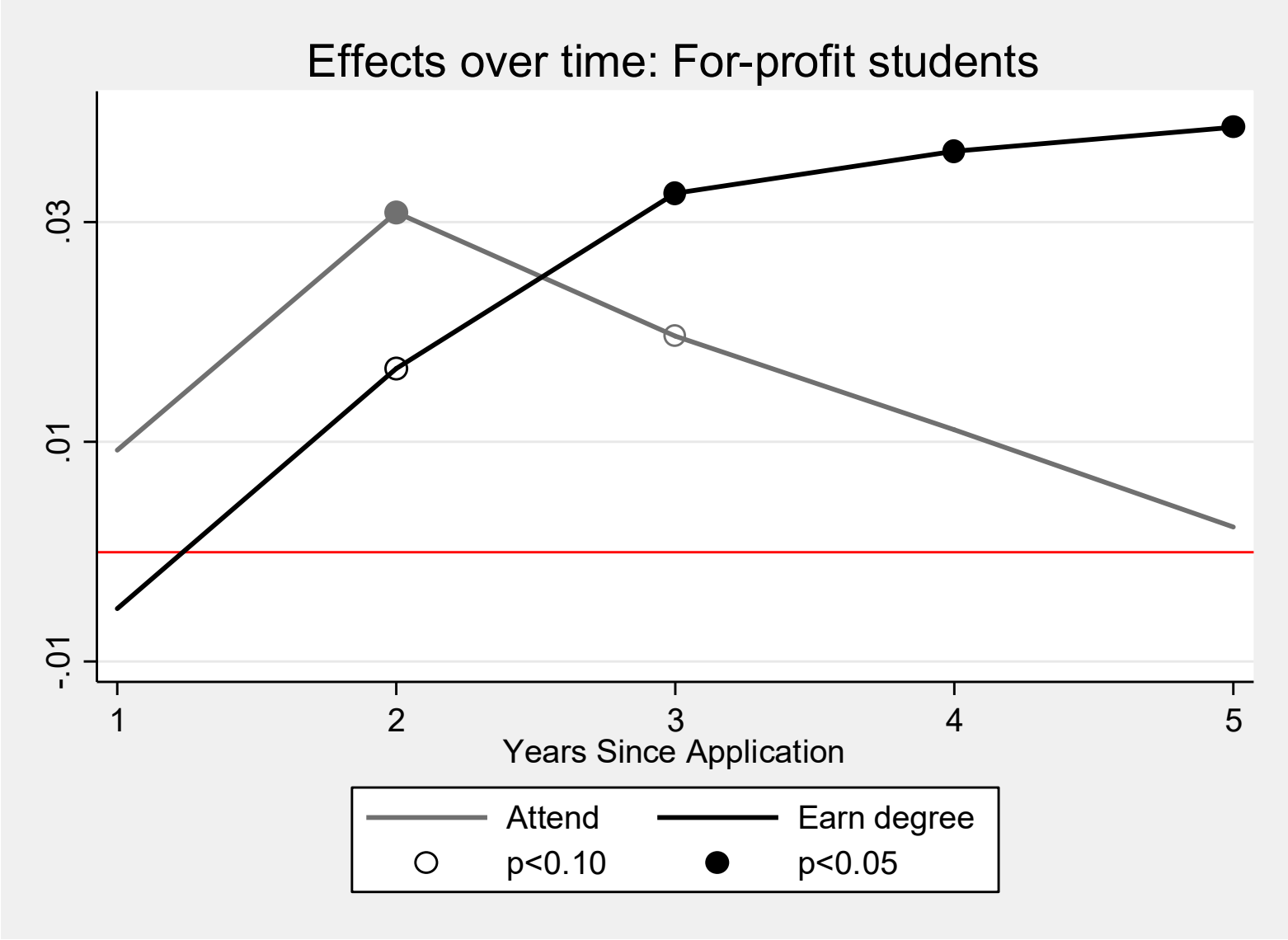

Impact on bachelor degree completion, For-profit students, Tri kernel
Linear
Quadratic
.08
.06
.04
.02
0
-.02
5
10
15
Bandwidth
Treatment Effect
95% CI

Results: Non-Reporting Schools

Appendix Table 4. Impacts of Competitive award on attendance and degree completion, NSC reporting robustness checks

	(1)	(2)	(3)	(4)
Student type		March for-profit		
Remove non-reporting colleges	No	Yes	Yes	Yes
Blocking restriction	None	>50%	>40%	>30%
N	41606	34852	34746	34738
Initial attendance	0.009	0.013	0.013	0.013
	(0.013)	(0.014)	(0.014)	(0.014)
Ever attended	0.001	0.004	0.004	0.004
	(0.013)	(0.013)	(0.013)	(0.013)
Associate degree	-0.005	-0.001	-0.001	-0.001
	(0.009)	(0.010)	(0.010)	(0.010)
Bachelor degree	0.039**	0.043**	0.043**	0.043**
	(0.011)	(0.013)	(0.013)	(0.013)
Any degree	0.030*	0.039**	0.038**	0.038**
	(0.013)	(0.014)	(0.014)	(0.014)

Notes. + p<0.1, * p<0.05, ** p<0.01. Coefficients are treatment effects at the eligibility threshold pooled across years, as estimated by equation (1). All regressions run linear specification that include all observations within 15 points of the eligiblity threshold. Robust standard errors in parentheses. Blocking restrictions refer to the percent of students reported blocked in the NSC Student Tracker Control report.



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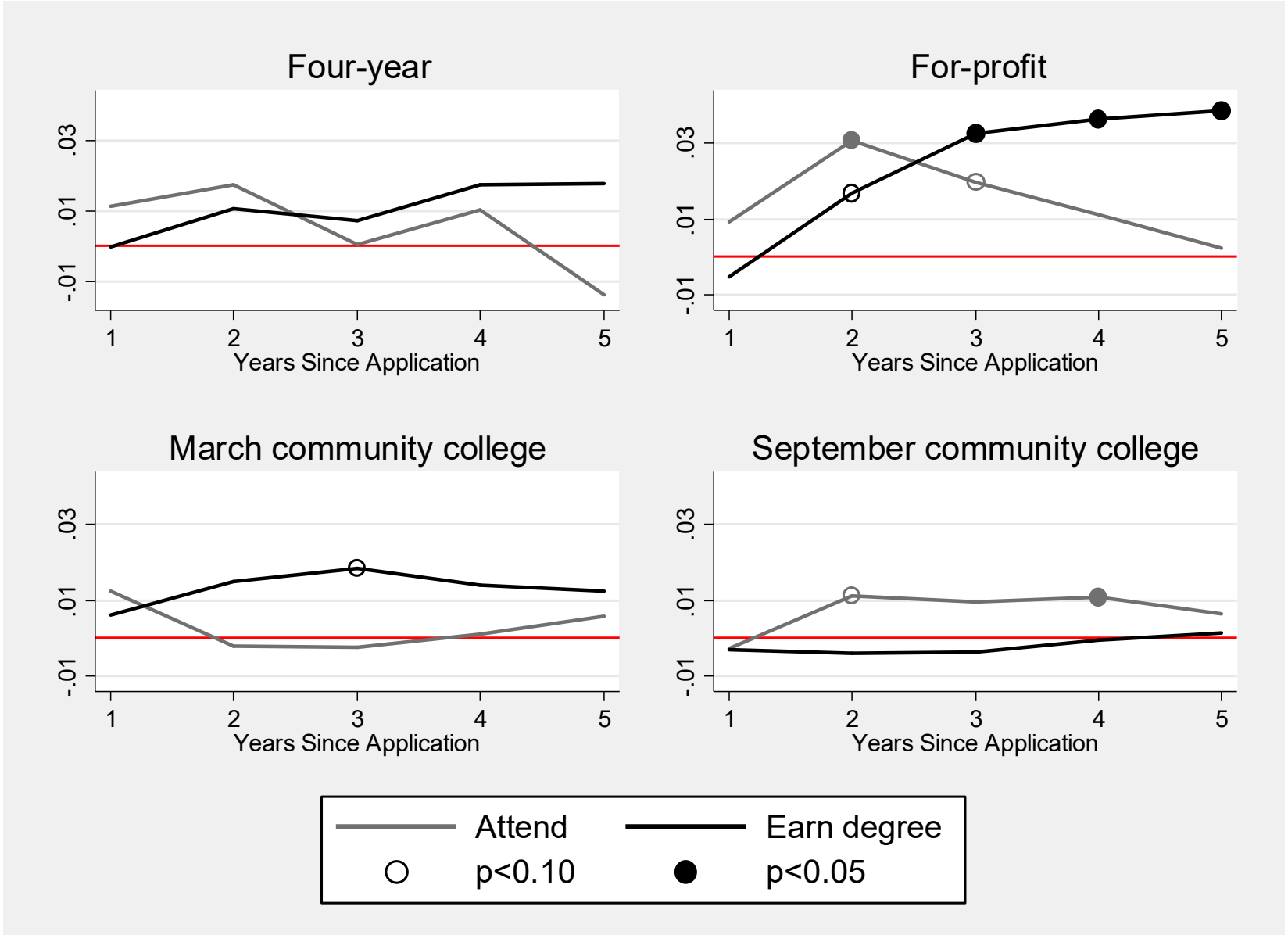
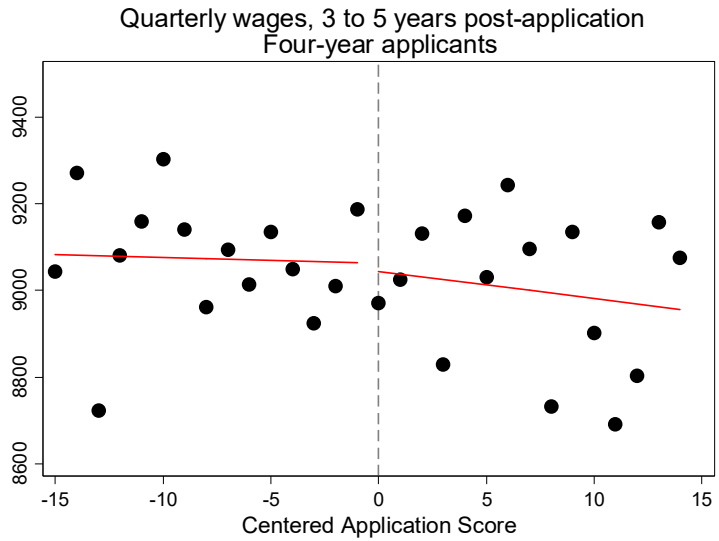
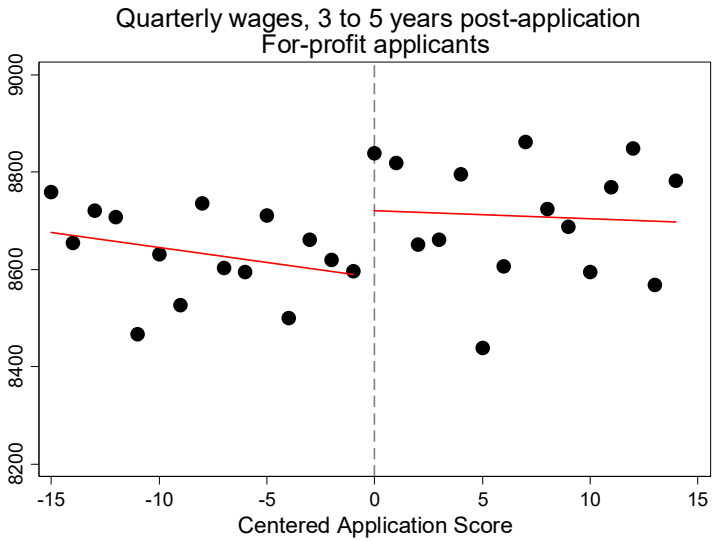
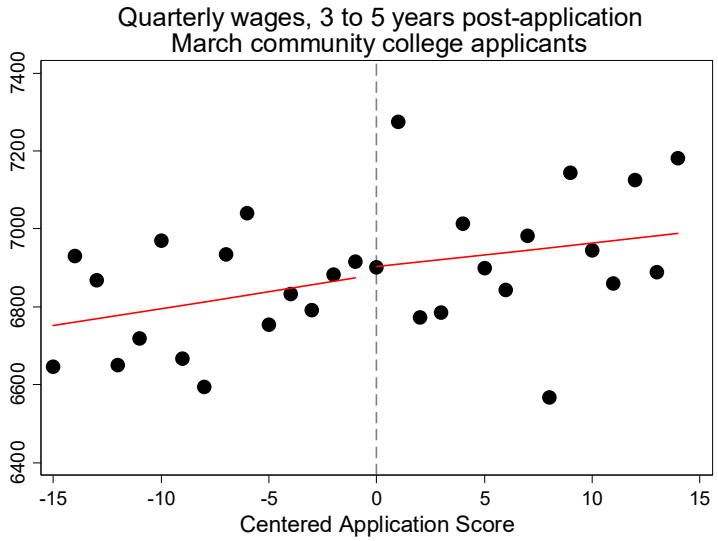
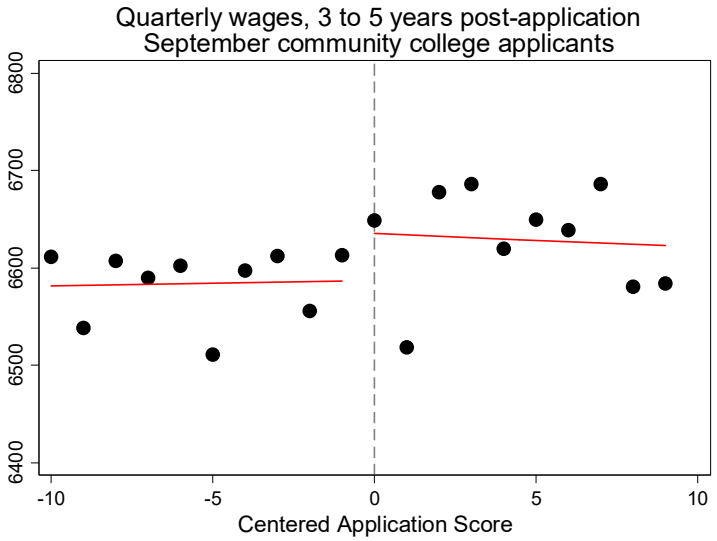

Four-year
For-profit
March community college
September community college
-.01
.01
.03
1
2
3
4
5
Years Since Application
Attend
Earn degree
p<0.10
p<0.05









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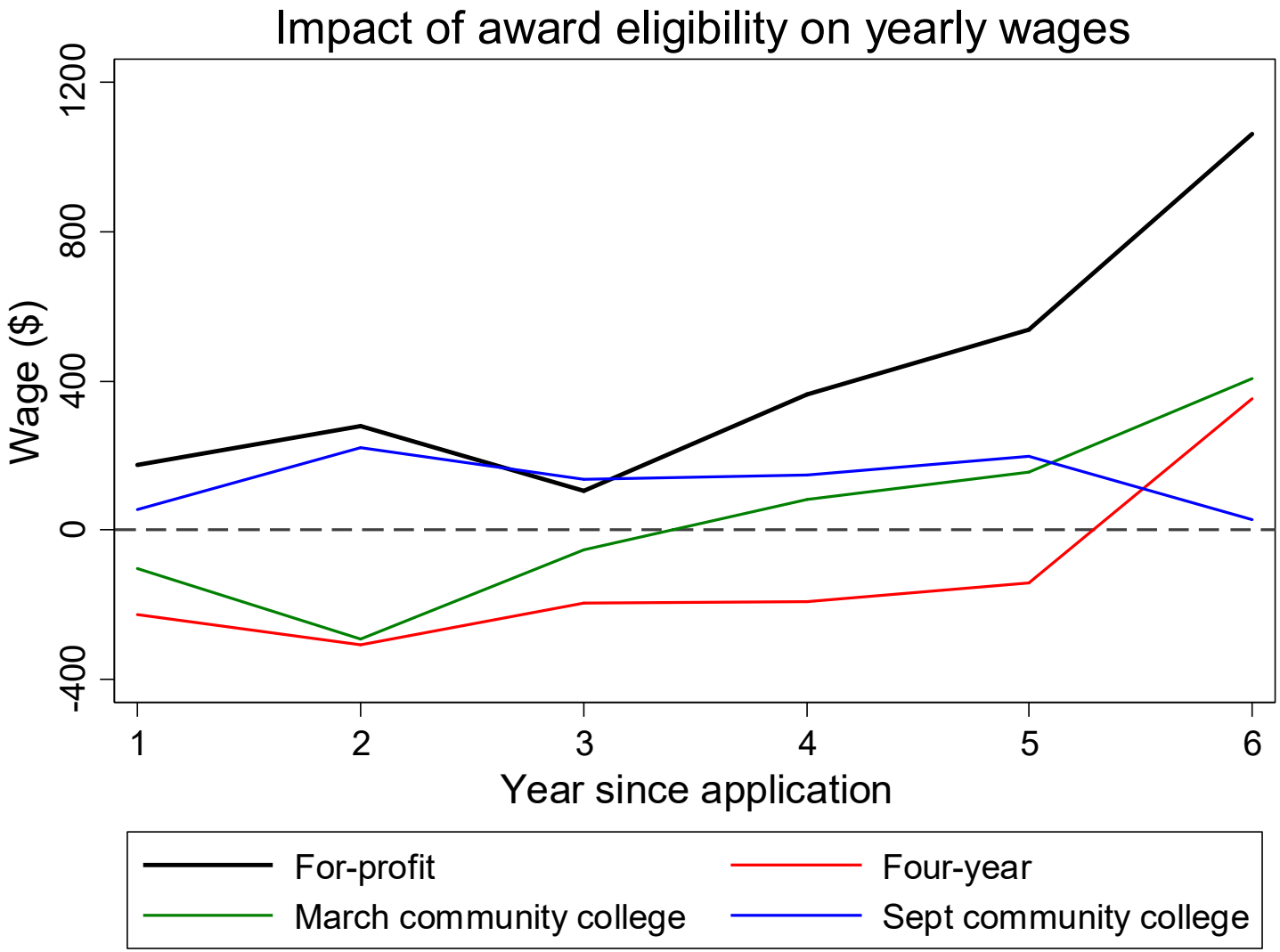

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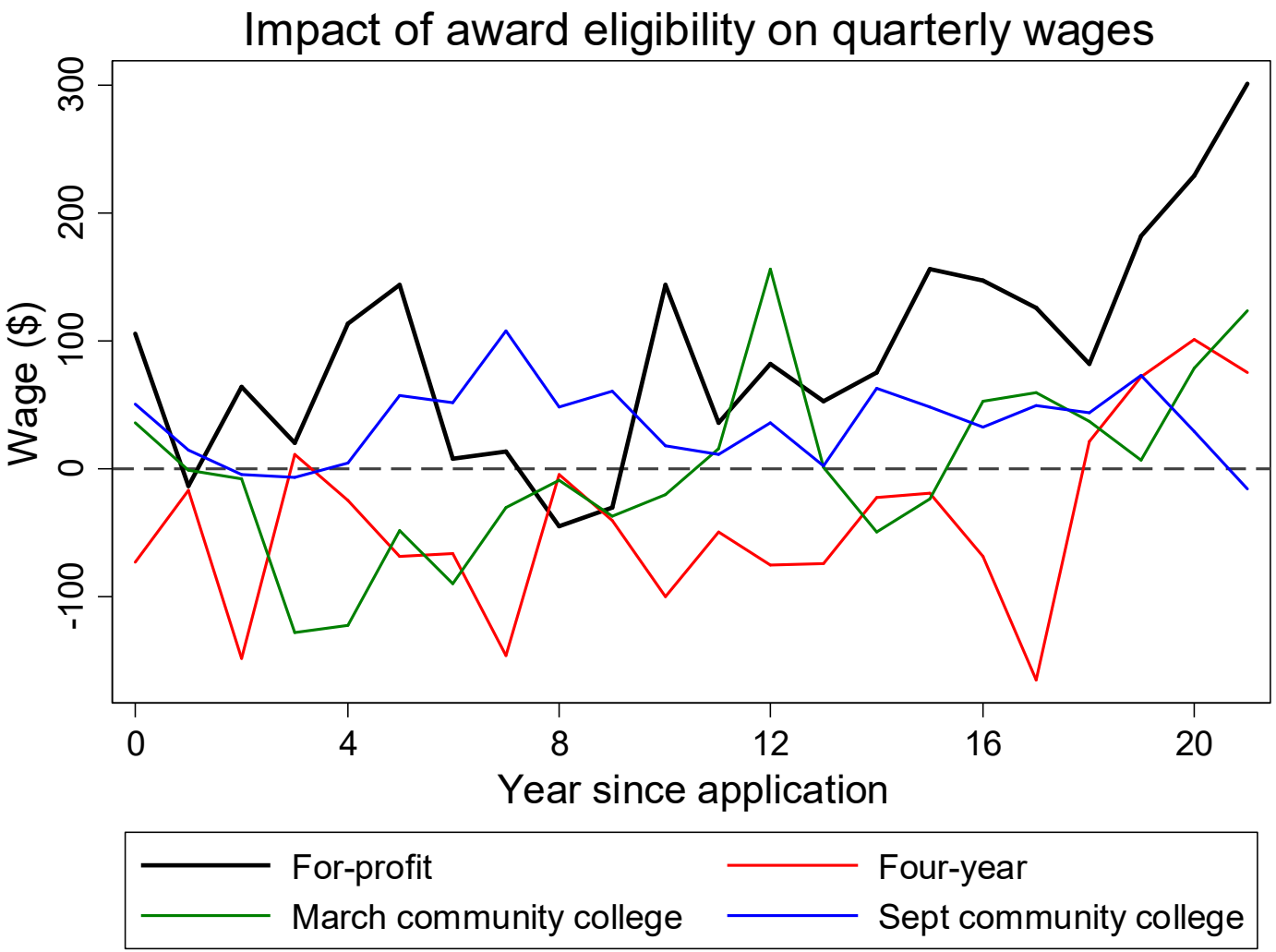

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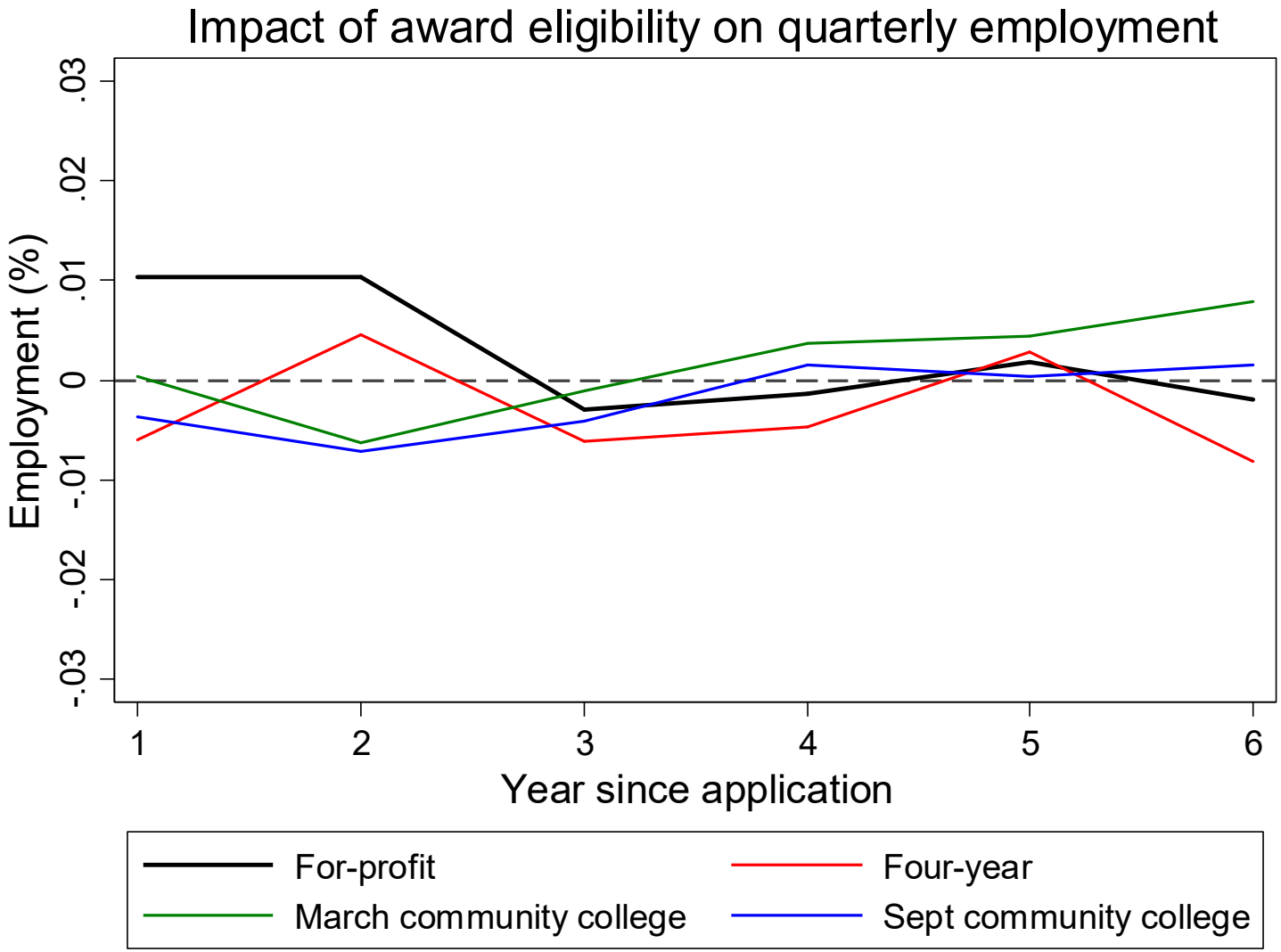

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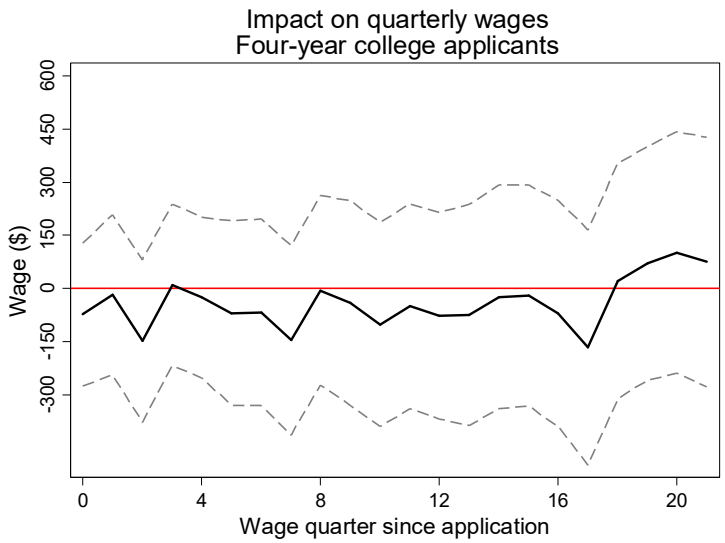

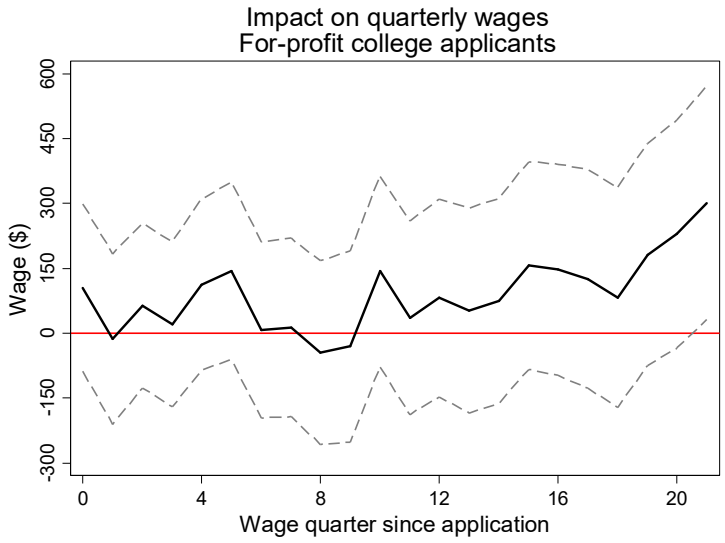

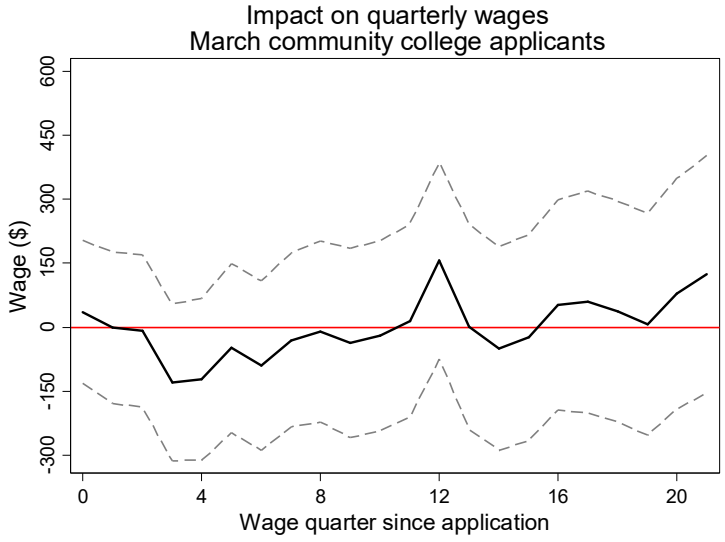

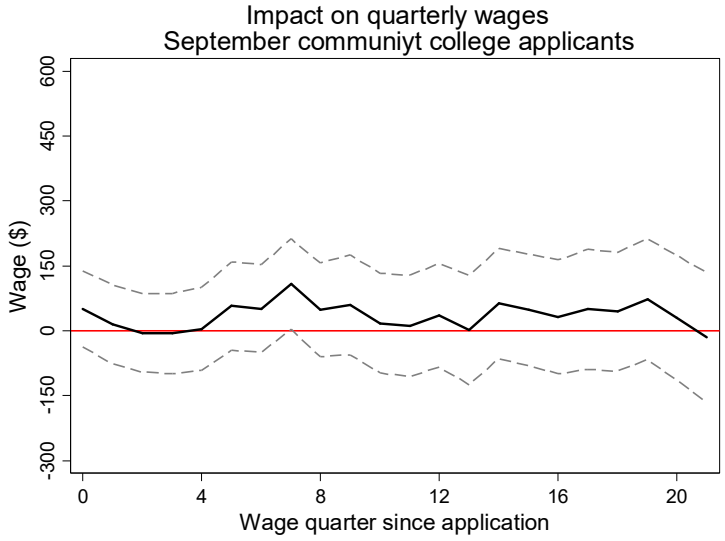

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