The Impact of Pell Grant Eligibility on Community College Students' Financial Aid Packages, Labor Supply, and Academic Outcomes

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Federal Financial Aid and Community College Students

- Financial Aid among CC students
  - Over $10 billion, 3.2 million recipients, 37% ($3,000/student) receive Pell
  - 12% ($1,600/student) receive state grant, 13% ($1,000/student) receive institutional grant aid, 17% ($4,700/student) take loans

- Prior Research on the effect of Pell Grants (Mixed!)
  - Little evidence on initial enrollment (Hansen 1983; Kane 1995), **No impact on college choice, course credits, or degree completion (Marx & Turner, 2015)**
  - Increase enrollment for adult students (Seftor & Turner, 2002) & increase persistence ad acceleration in graduation condition on enrollment (Bettinger, 2004; Denning, 2016)
  - Why might effect be smaller than for other aid?
    - ✓ Complexity of application process, low predictability, and late notice of Pell amount (Bettinger et al., 2009; Dynarski & Scott-Clayton 2006; Dynarski & Wiederspan, 2012; Scott-Clayton, 2013)
    - ✓ State & institutional aid interact with Pell (Bettinger & Williams, 2013; Turner, 2014)

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Research Question and Data

- We use a regression discontinuity (running variable: EFC) design to examine:
  - How does Pell interact with other financial aid programs?
  - What is the effect of minimum Pell Eligibility on student labor supply and academic outcomes?

$$Y_{ist} = \alpha + \beta_1 (PellEligible_i) + \beta_2 (Dis\,t_i * Above_i) + \beta_3 (Dis\,t_i * Below_i) + X_i \delta + \phi_s + \tau_t + \varepsilon_{ist}$$

- Administrative data on community college enrollees in a single state
  - 2008-2010 Cohort
  - Student demographics and transcript
  - First-year financial aid eligibility and receipt data
  - Quarterly earnings (before, during and after enrollment)
  - Degree/transfer from NSC

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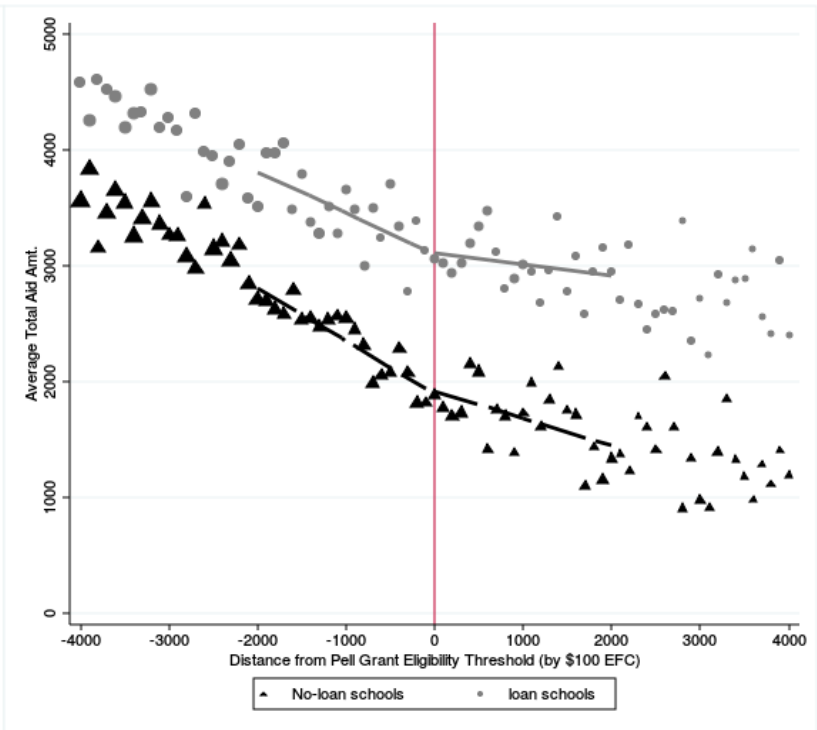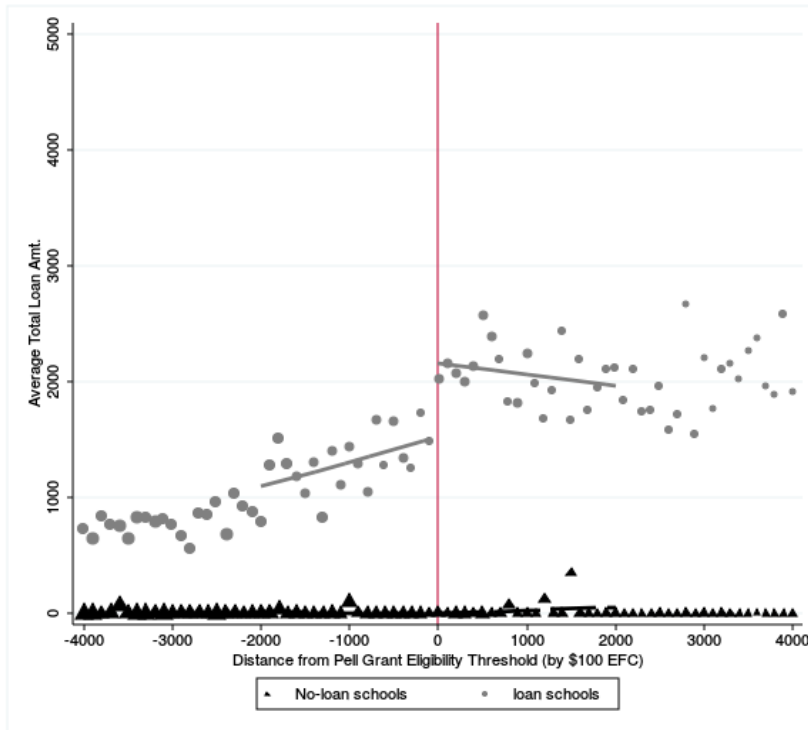# Estimated Pell Grant Amt($). by Centered-EFC (2008-10 cohort)
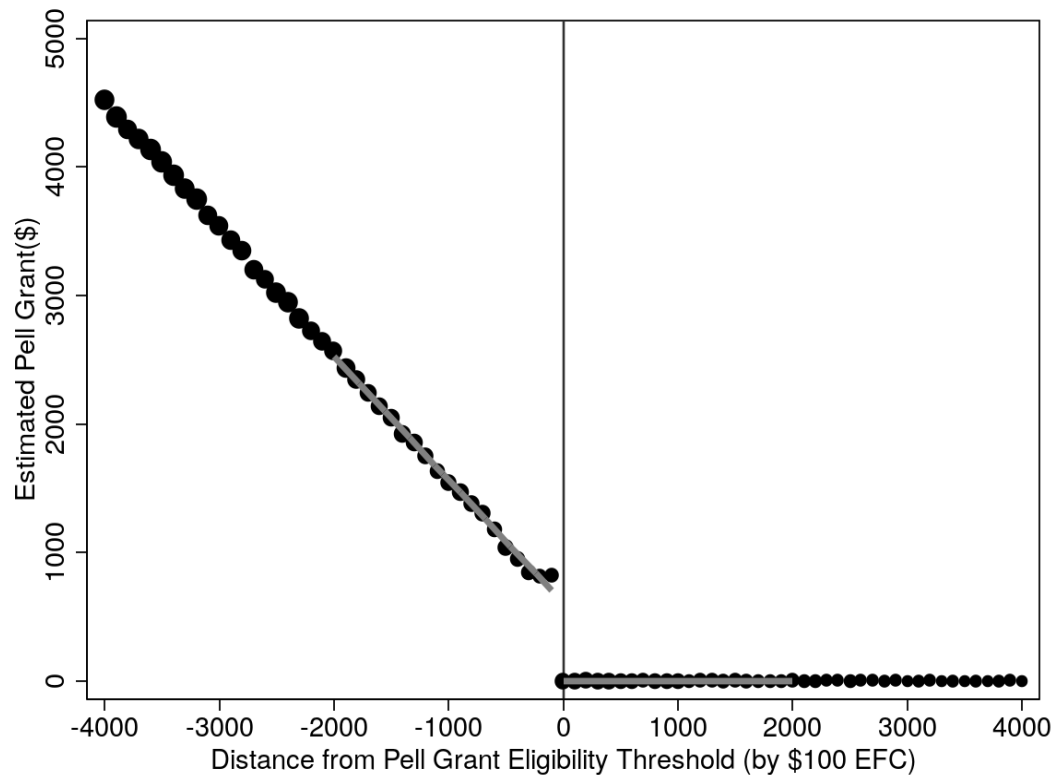
How does Pell Eligibility Interact with Other Aid?

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Grant Amounts ($) for Loan & No-Loan Schools
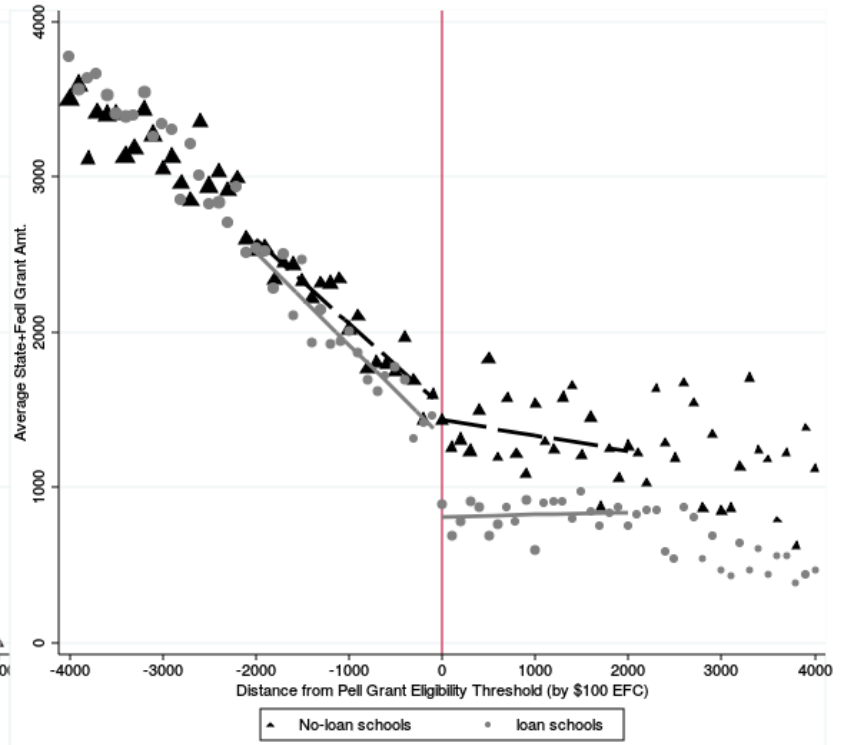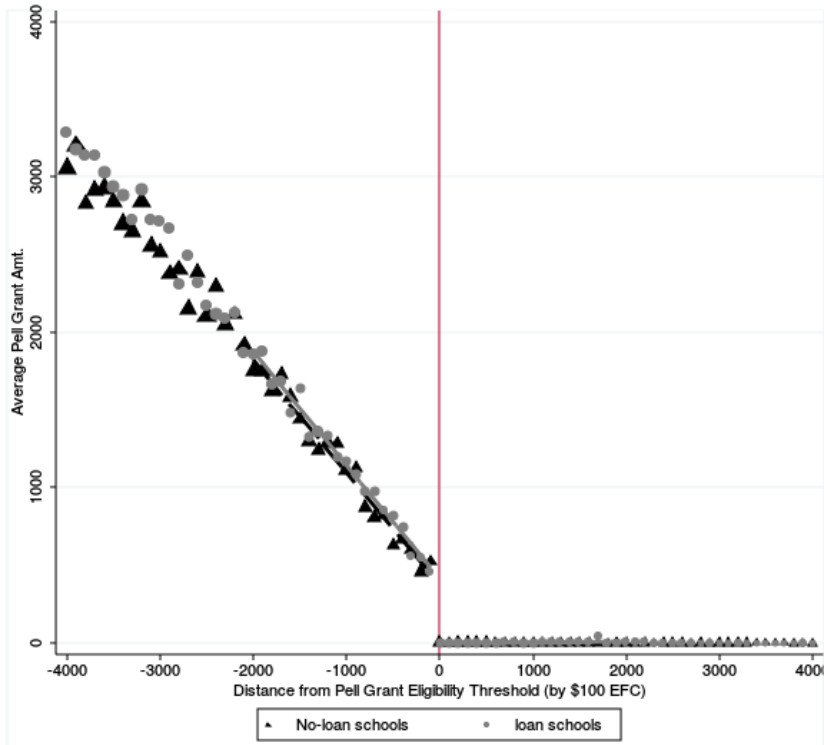
Loan and Total Aid Amounts ($) for Loan and No-Loan Schools

Effect of Pell Eligibility on Composition of Financial Aid Packages (by Inst. Type)

Outcome	Mean Outcomes Just Above Cutoff	(1) Basic 2000bw. Coef.	(S.E.)	
Institutions Offering Federal Loans				
Amount of Pell received	$0	$459	(17)	***
Amount of Pell+State grants received	$869	$560	(64)	***
Amount of loans received	$1,953	-$592	(113)	***
Amount of total aid received	$2,993	$89	(129)	
Sample size	1,421	5,753		
Institutions Not Offering Federal Loans				
Amount of Pell received	$0	$434	(25)	***
Amount of Pell+State grants received	$1,640	$132	(105)	
Amount of loans received	$4	$3	(8)	
Amount of total aid received	$2,044	$153	(123)	
Sample size	456	2,102		

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Effect of Pell Eligibility on Student Labor Supply and Academic Outcomes
(Among Loan-Schools)

Effects of First & Second Year Pell Eligibility on Labor Supply and Enrollment & Persistence

Outcome	Mean Outcomes Just Above Cutoff	(1) Basic 2000bw. Coef.	(S.E.)	
Year 1 Outcomes				
Enrolled full-time, Year 1 Fall	0.657	0.020	(0.024)	
Enrolled full-time, Year 1 Spring	0.520	0.048	(0.026)	*
Cum. Year 1 earnings (Q4-Q3)	$4,873	-$806	(393)	**
Year 2 Outcomes				
Enrolled full-time, Year 2 Fall	0.371	0.074	(0.026)	***
Enrolled full-time, Year 2 Spring	0.328	0.044	(0.025)	*
Cum. Year 2 earnings (Q4-Q3)	$5,323	-$534	(445)	
Sample size	1,421	5,753		

Effects of Third Year Pell Eligibility on Academic Attainment

Outcome	Mean Outcomes Just Above Cutoff	(1) Basic 2000bw. Coef.	(S.E.)
End of Year 3 Attainment Outcomes			
Cum. GPA	2.392	0.084	(0.052)
Cum. credits earned	35.205	1.741	(1.342)
Ever transferred to 4-Yr	0.215	0.026	(0.021)
Earned any degree/cert	0.206	0.010	(0.021)
Earned any degree/cert or transferred	0.317	0.026	(0.024)
Sample size	1,421	5,753	

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Does Pell Eligibility Affect Initial Enrollment?

Density Plots (Loan vs. No-Loan)

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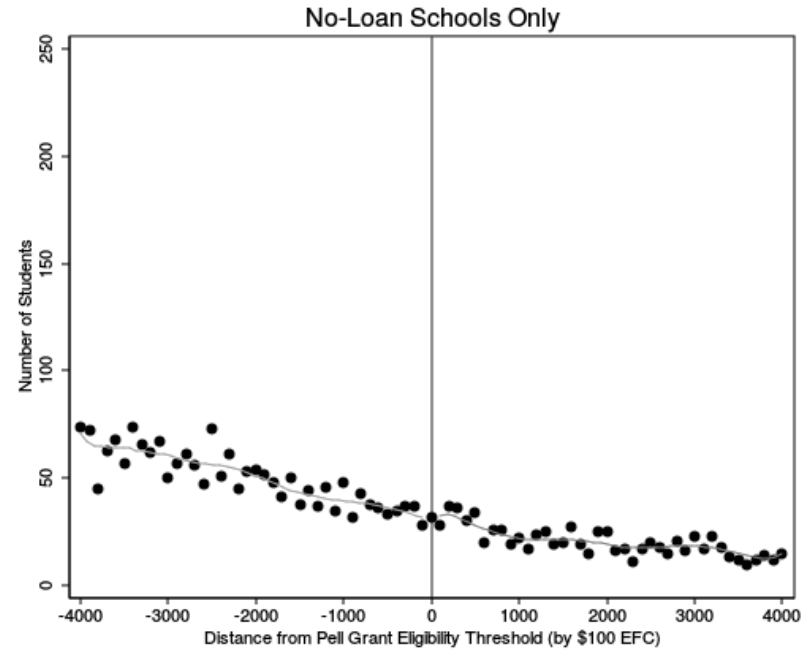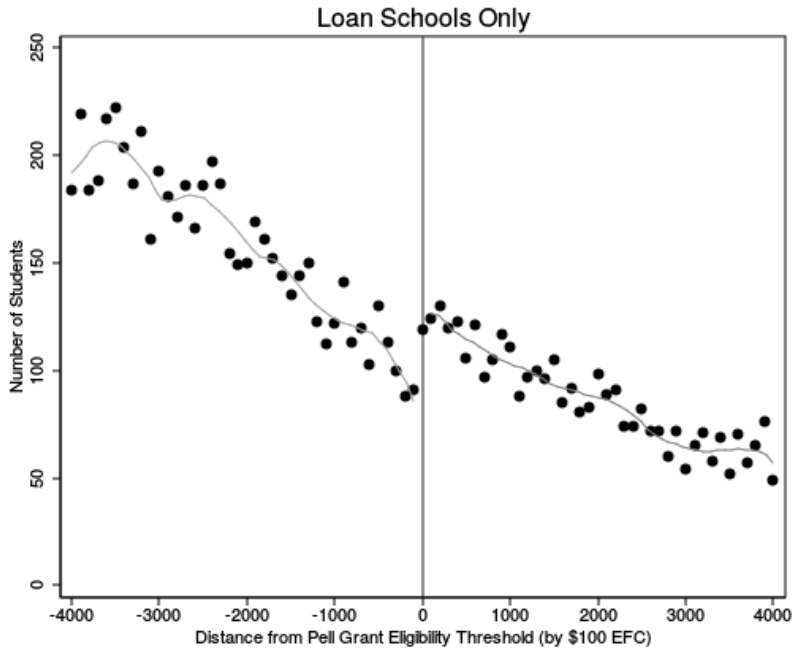
Addressing Sample Selection Bias 1. Subgroup where no discontinuity is present (Calcagno & Long 2008)

Characteristics of Continuous vs. Non-Continuous schools
(2008–2010 Cohort, Loan Schools)

Outcome	Continous Schools Mean	Non-Continous Schools Mean
Female (%)	0.528	0.511
Black (%)	0.223	0.285
Hispanic (%)	0.031	0.120
Asian (%)	0.024	0.107
White(%)	0.717	0.481
Age	21.616	21.601
Income	$38,752	$44,754
Depend	0.688	0.692
Prior Year Earnings (Q3-Q4-Q1-Q2)	$2,921	$2,597
Sample Size	24,321	43,221

Local Markets
Continuous vs. Non-Continuous schools

Outcome	Continous Schools Mean	Non-Continous Schools Mean
Local Market		
Avg. Number of nearby 2-year public schools (N)	0.0	0.0
Avg. Distance to nearest 2-year school (miles)	27.7	25.3
Avg. Number of nearby 4-year schools (N)	0.4	1.7
Avg. Distance to the nearest 4-year school (miles)	20.4	3.0
Avg. Number of nearby for-profit schools (N)	1.8	12.7
Avg. Distance to nearest for-profit school (miles)	18.2	2.5

Nearby < 10miles

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Conclusions

- Complex interaction between Pell Grant and other financial aid programs
  - Distinctive pattern of financial aid packaging between institutions that participate in federal loan verses those that do not.
  - Can't ignore the role of institutionally-distributed aid, even in the CC sector

- Students receiving Pell (at the margin ≈ $500) shifts time allocation, reducing work, while increasing enrollment intensity.

- Indirect evidence that Pell eligibility may alter students' initial enrollment choices: possibly to for-profit or 4-year alternatives.

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Identification Strategy

- Regression Discontinuity Design
  - Expected Family Contribution (EFC) as a running variable
  - Among students just around Pell-eligibility cutoff

- Specification:

$$Y_{ist} = \alpha + \beta_1 (PellEligible_i) + \beta_2 (Dist_i * Above_i) + \beta_3 (Dist_i * Below_i) + X_i \delta + \phi_s + \tau_t + \varepsilon_{ist}$$

- Key Assumption:
  - Smoothness in the relationship between forcing variable and outcomes
  - We test in two ways: (1) continuity of density (2) continuity of covariates

Addressing Sample Selection Bias 1. Subgroup where no discontinuity is present

Effects of First & Second Year Pell Eligibility on Labor Supply and Enrollment & Persistence

Outcome	Continuous Density Schools				Non-Continuous Density Schools			
	(1) Mean Outcomes Just Above Cutoff	(2) Coef.	(3) (S.E.)	(4)	(5) Mean Outcomes Just Above Cutoff	(6) Coef.	(7) (S.E.)	(8)
Year 1 Outcomes								
Enrolled full-time, Year 1 Fall	0.683	0.022	(0.035)		0.639	0.021	(0.032)	
Enrolled full-time, Year 1 Spring	0.542	0.012	(0.039)		0.505	0.076	(0.034)	**
Cum. Year 1 earnings (Q4-Q3)	$4,643	$38	(558)		$5,030	-$1,269	(545)	**
Year 2 Outcomes								
Enrolled full-time, Year 2 Fall	0.367	0.045	(0.039)		0.373	0.094	(0.034)	***
Enrolled full-time, Year 2 Spring	0.317	0.028	(0.037)		0.335	0.055	(0.034)	
Cum. Year 2 earnings (Q4-Q3)	$5,270	$423	(652)		$5,359	-$1,132	(607)	*
Sample size	577	2,506			844	3,247		

Addressing Sample Selection Bias 2. GRR Bounding Exercise

Effects of First & Second Year Pell Eligibility on Labor Supply and Enrollment & Persistence

Outcome	(1) Original Estimates		(2) Trim by each outcome		(3) Trim by cum. GPA fall semester, 1st year	
	Coef	(S.E.)	[low,	upper]	[low,	upper]
Year 1 Outcomes						
Enrolled full-time, Year 1 Fall	0.020	(0.024)	[-0.213,	0.374]	[-0.017,	0.021]
Enrolled full-time, Year 1 Spring	0.048	(0.026)	[-0.248,	0.339]	[-0.061,	0.085]
Cum. Year 1 Earnings (Q4-Q3)	-$312	(192)	[$-2,749,	$3,630]	**[$-347,**	**$-121]**
Year 2 Outcomes						
Enrolled full-time, Year 2 Fall	0.074	(0.026)	[-0.343,	0.244]	[-0.017,	0.121]
Enrolled full-time, Year 2 Spring	0.044	(0.025)	[-0.424,	0.163]	[-0.027,	0.090]
Enrolled, Year 2 Summer	-0.004	(0.022)	[-0.491,	0.096]	[-0.044,	0.023]
Cum. Year 2 Earnings (Q4-Q3)	-$281	(224)	[$-2,865,	$4,477]	**[$-381,**	**$-54]**
Sample Size	5,753	5,753	4,576	4,576	4,431	4,448

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