

Losing Access Missouri: The effects of losing needs-based financial aid based upon academic criteria

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Overview of the Study

- **RQ:** What is the effect of losing the Access Missouri Financial Assistance Program award on retention between a student's 1st and 2nd academic year?
- **Empirical Strategy:** Regression discontinuity design
- **Sample:** Freshman in MO public higher education – 2007-12
- **Findings:**
 - 1) No negative effect of losing state financial aid on retention
 - 2) Renewal of financial aid increases within system transfer rates

Background – Access Missouri

- **Needs-based financial aid program**
 - Established 2007-2008 via MO state law
 - Initial qualifying criteria
 - File FAFSA and have EFC less than \$12,000
 - MO resident enrolled full-time at a qualifying MO institution
 - Continuing qualifying criteria (up to 10 semesters)
 - Meet initial eligibility requirements
 - Have a **cumulative GPA of 2.5** and meet SAP
- Awards
 - Maximum of \$2,850 at 4-year and \$1,300 at 2-year institutions (2019-2020)
 - Award adjusted based upon overall program budget

Motivation - Policy

- **Policy contradiction**

- Needs-based programs are assigned to applicants who are from low-income families without considering their academic background.
- Renewal typically happens with continuing eligibility and the addition of a SAP requirement (generally 2.0)
- Generally, losing aid due to academic criteria reduces success
 - Schudde & Scott-Clayton (2016), Scott-Clayton & Schudde (2019), Carruthers and Özek (2016)

- **Contribution of our study**

- Missouri Access adds in a higher GPA requirement for renewal
 - This GPA cutoff (2.5) occurs within the range of GPA for which a student is making progress towards graduation.
 - SAP criteria (2.0 GPA) confounds losing aid and academic probation

Data and Sample

- **Statewide longitudinal administrative data (MDHEWD)**
 - All students at public 2- and 4-year institutions
- **Sample**
 - First-time, full-time degree-seeking students from MO
 - All MO public 4 year universities and colleges
 - Restricted due to research design assumptions
 - 2007-08 to 2012-13 academic years
 - 2007-08 is the first year of the program
 - After 2012-2013 there are data quality concerns (working through them)
 - Received only Access Missouri (i.e. no other state grant programs)

Sample Statistics

Table 2 Sample size by year and financial aid programs

Year	Bright Flight <u>or</u> Access MO	Bright Flight <u>and</u> Access MO	Only Bright Flight	Only Access MO	Neither
2007	6,480	509	1,258	4,713	7,952
2008	7,044	386	876	5,782	8,018
2009	7,061	370	898	5,793	7,568
2010	7,754	438	848	6,468	7,545
2011	7,611	365	792	6,454	7,338
2012	7,542	391	743	6,408	6,876
Total	43,492	2,459	5,415	35,618	45,297



Empirical strategy - Specifics

- **Sharp Regression Discontinuity Design**

- Intent-to-treat interpretation

- **Statistical representation**

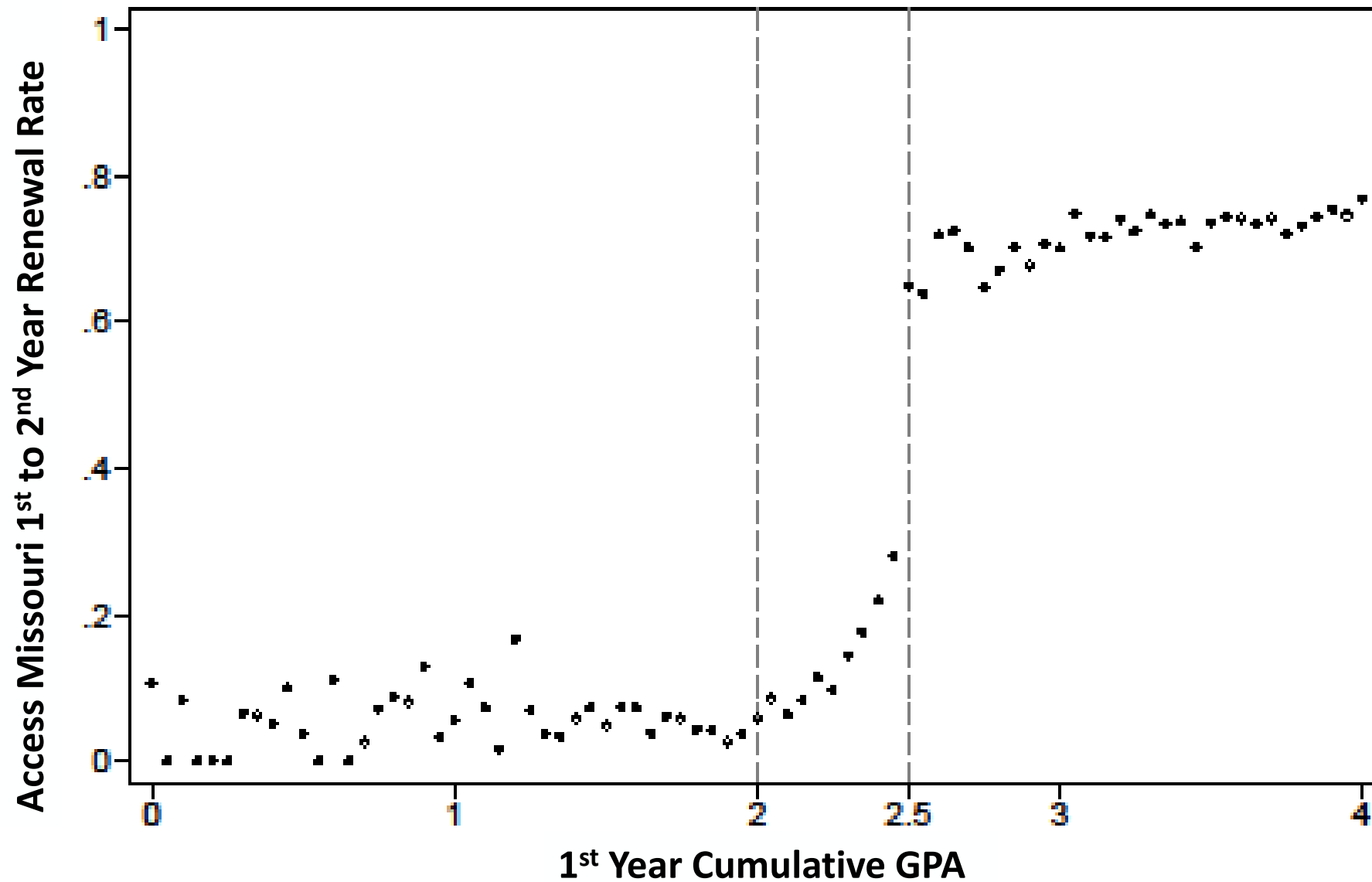
- $$Y_i = \alpha + \beta Above_2.5_i + \gamma' f(GPA_i) + \theta' X_i + \varepsilon$$

- Y_i is the outcome variable
- $Above_2.5_i$ is an indicator for whether the subject's GPA was greater than 2.5
- $f(GPA_i)$ is a flexible form of the forcing variable
- X_i is a set of control variables
- ε is a random error term

- **β can be interpreted as the causal effect of being offered a renewal of Access Missouri Grant on the outcome for subjects who are near the GPA cutoff value**



Missouri Access 2nd Year Renewal Rate

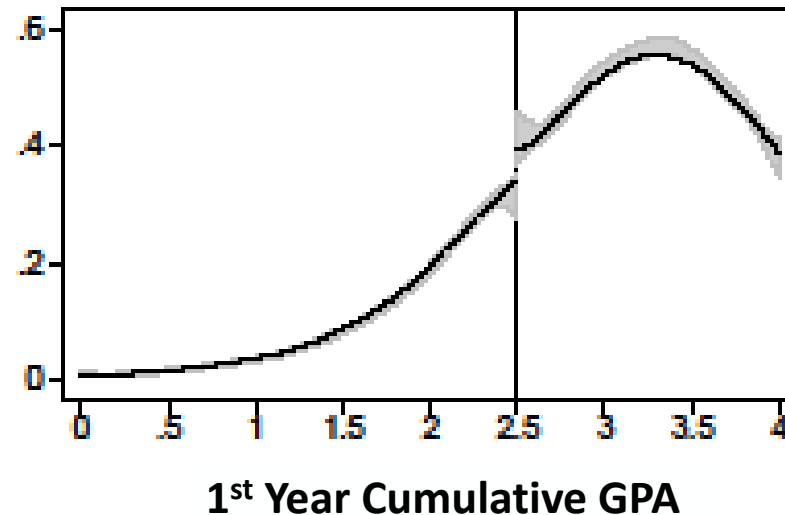
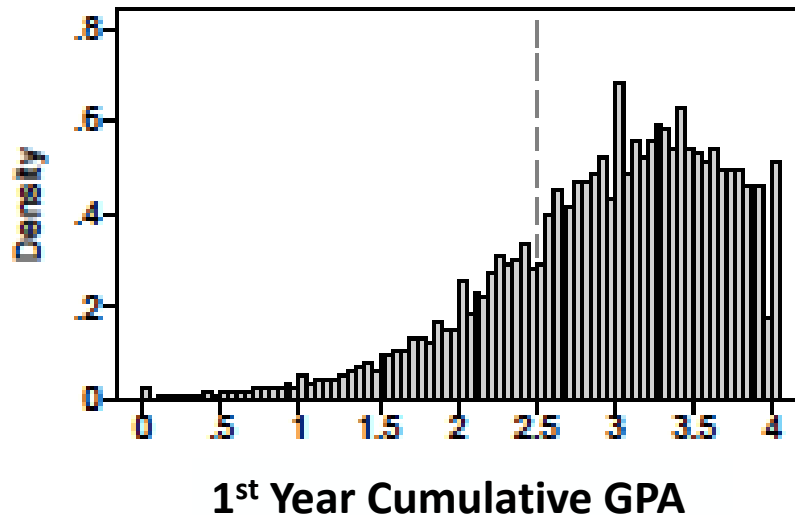
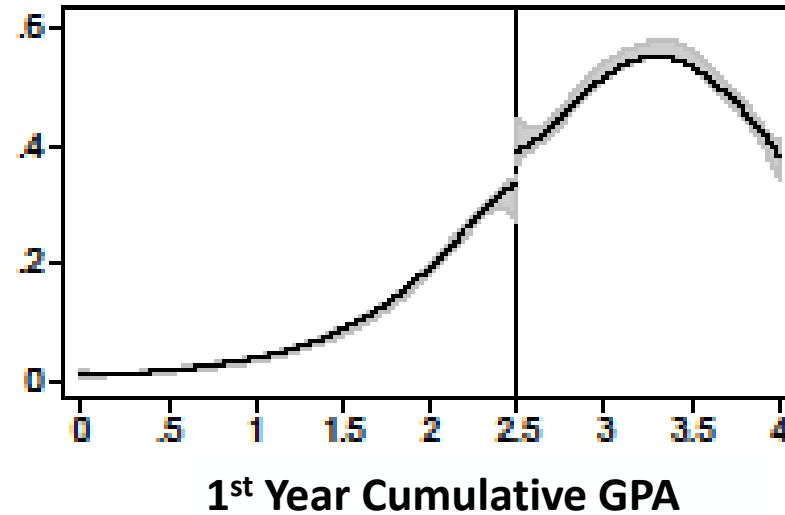
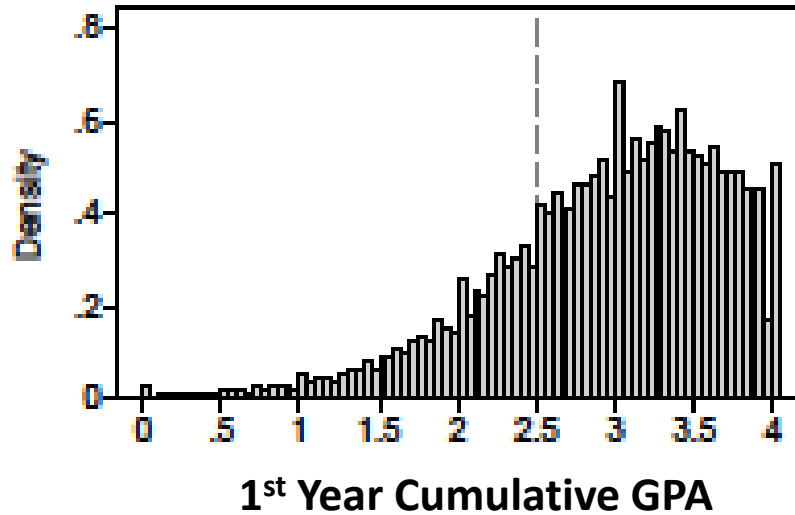


Sample Statistics

Table 3 Summary Statistics of Dependent Variables

	Full sample			Restricted Sample - GPA 2.0-3.0		
	Mean	SD	N	Mean	SD	N
Retention w/in institution	0.838	0.369	25,639	0.851	0.356	8,970
Retention w/in MO HE	0.944	0.230	25,639	0.954	0.209	8,970

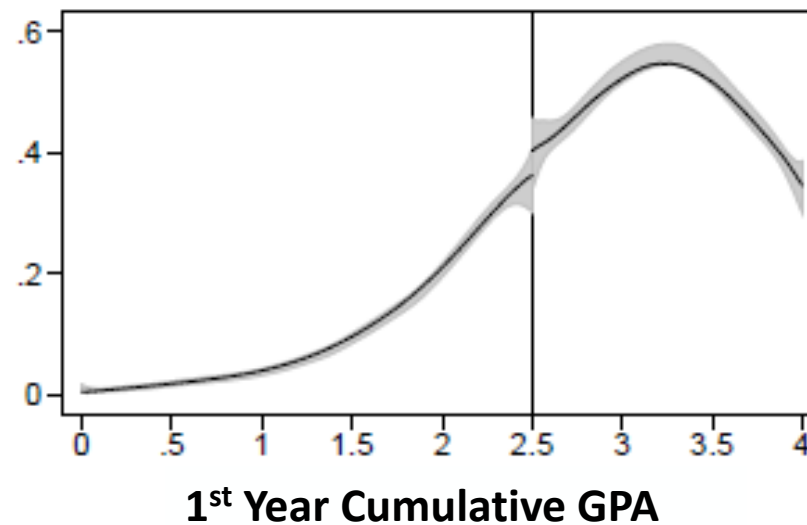
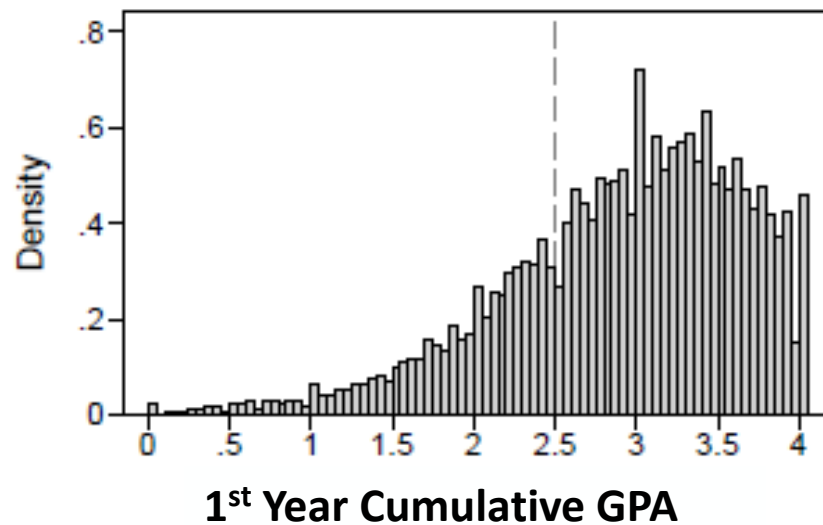
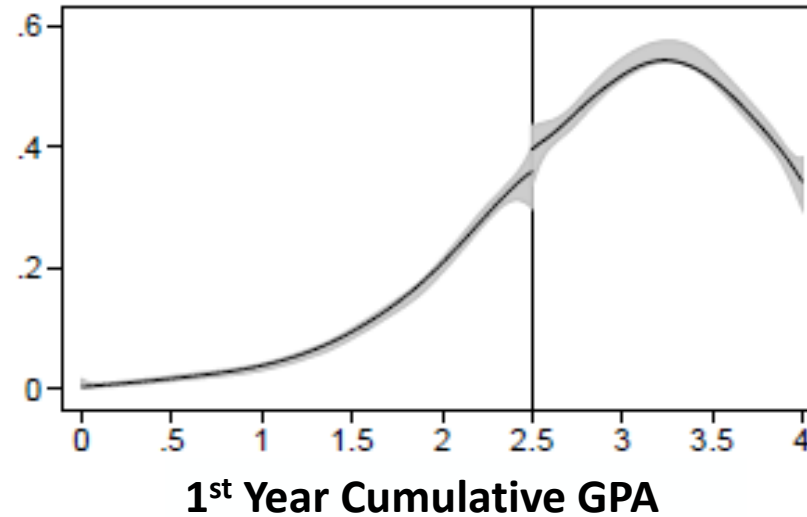
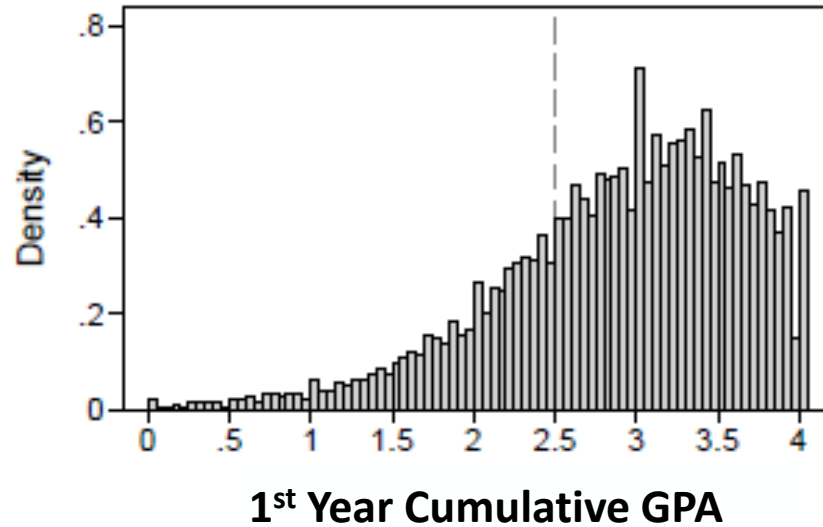
Empirical Strategy - Assumptions



No manipulation of the forcing variable

- There is no jump in the distribution of the forcing variable at the treatment cutoff?
- Evidence: density change plots
 - YES??

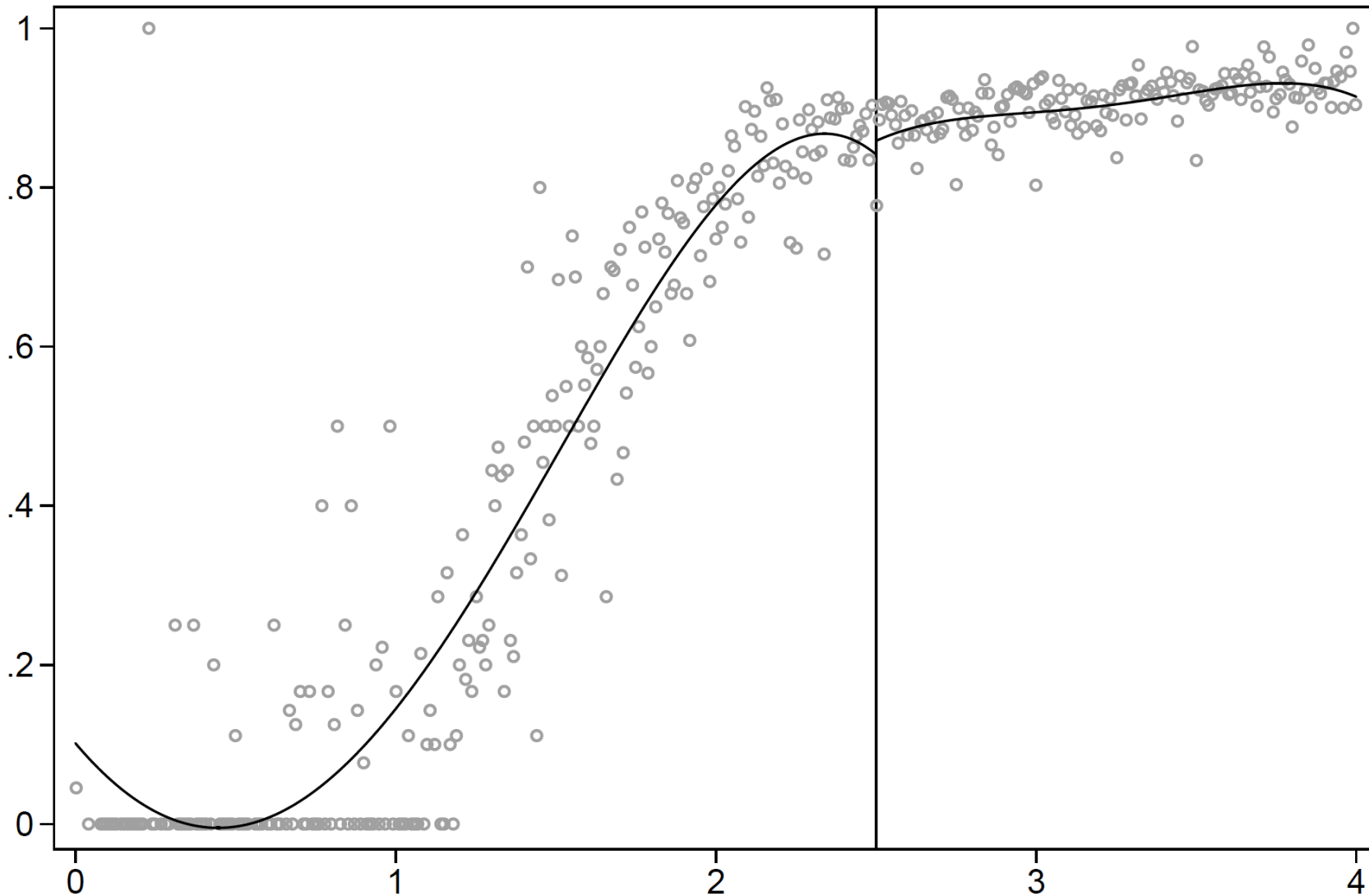
Empirical Strategy - Assumptions



No manipulation of the forcing variable

- Solution: remove institutions with evidence of manipulation
 - Central Missouri
 - Truman State
 - Missouri State
 - UM-St. Louis

Empirical Strategy - Assumptions



Non-Access Missouri Students

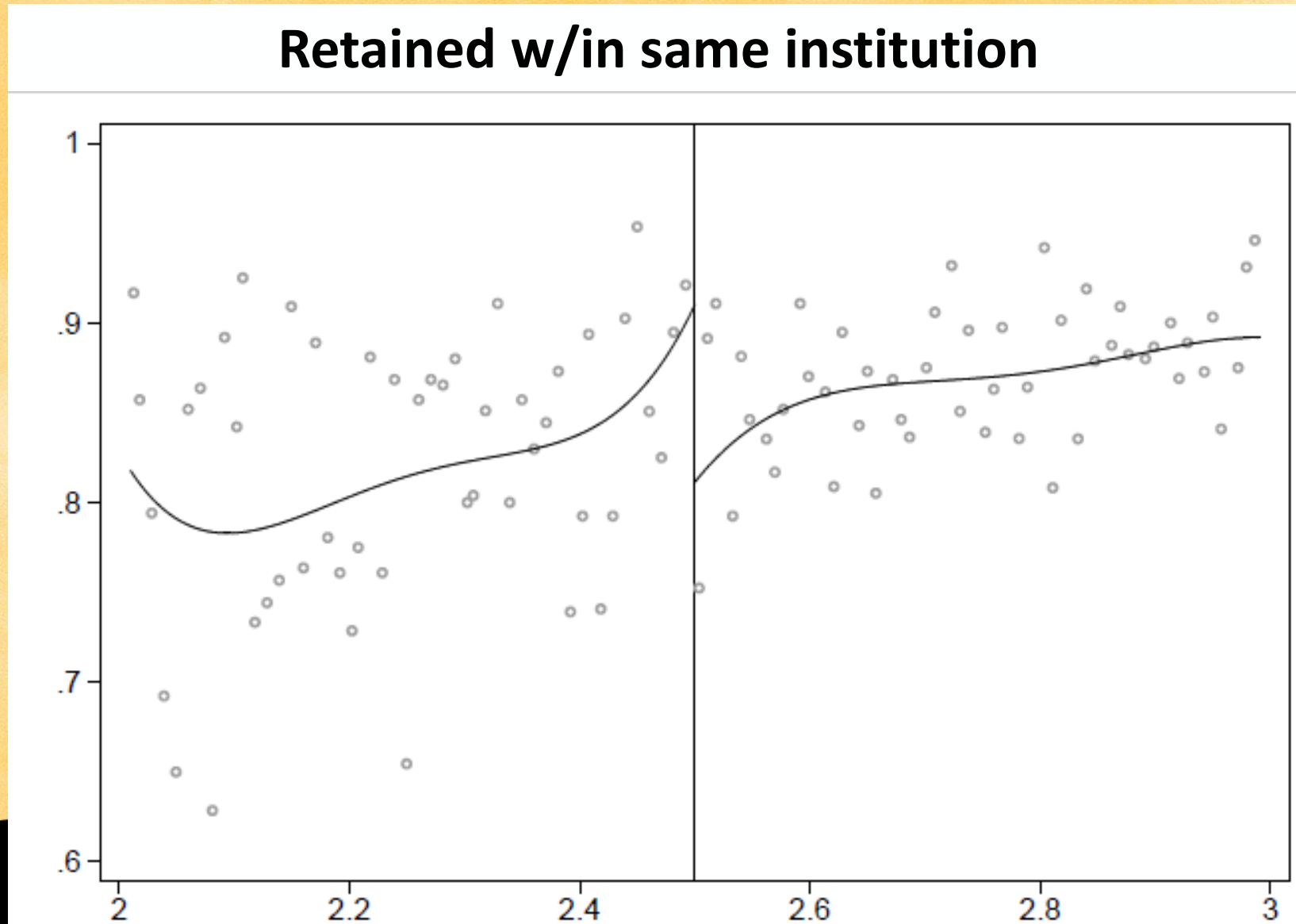
Continuity of the outcome-forcing relationship

- Would the relationship between GPA and Retention be continuous in the absence of treatment?
- Evidence: show relationship for non-Access Missouri students



University of Missouri

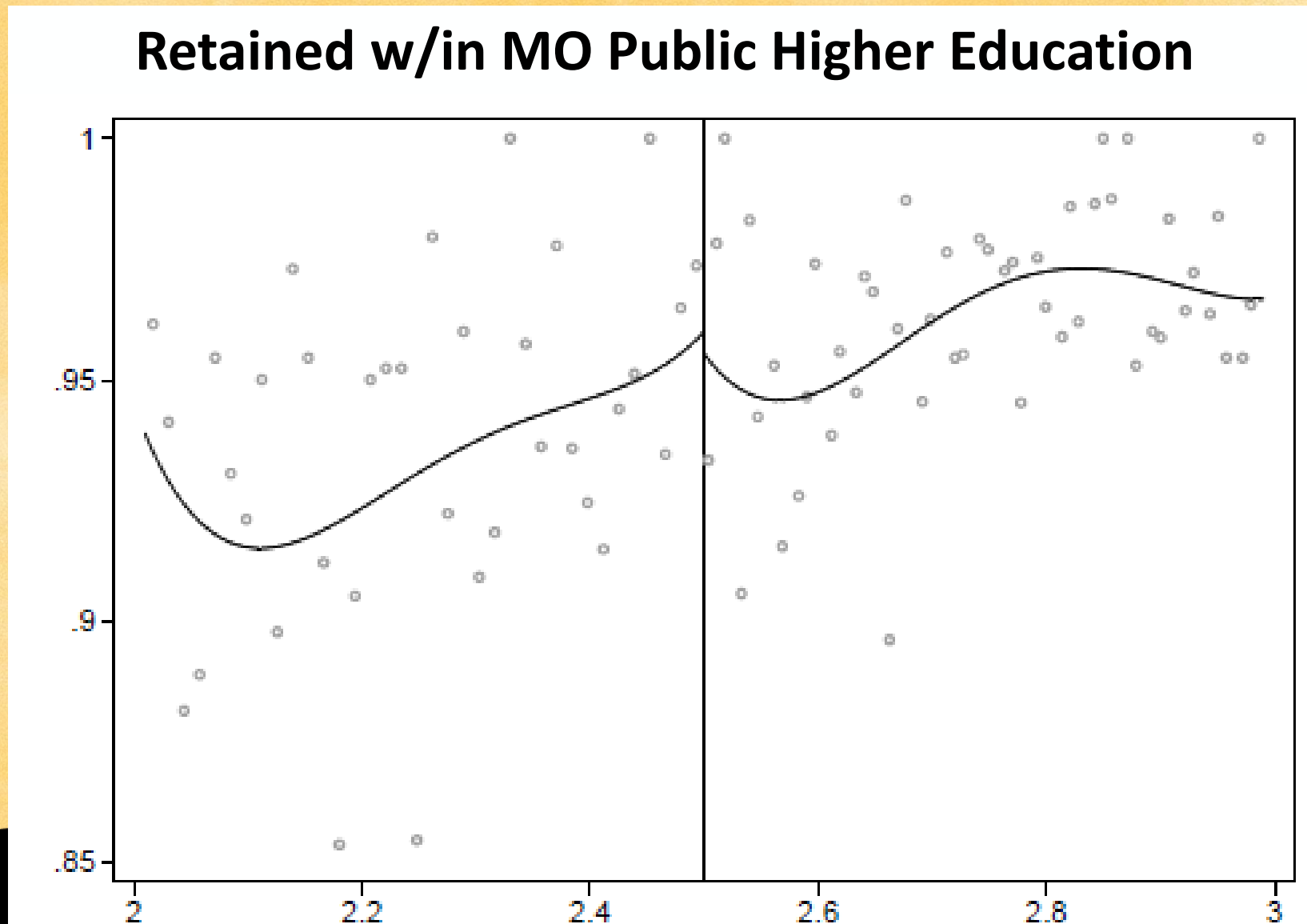
Findings – Retention in Same Institution



Findings – Retention in Same Institution

Table 5 Parametric method - Retained w/in Same Institution			
	Parametric		Nonparametric
	Linear	Quadratic	
	BW: 2.0-3.0		BW: Optimal
Eligible	-0.010	-0.036	-0.108***
	(0.015)	(0.023)	(0.038)
	BW: 2.25-2.75		
Eligible	-0.024	-0.092***	
	(0.022)	(0.033)	

Findings – Retention in MO Public HE



Findings – Retention in MO Public HE

Table 5 Parametric method - Retained w/in MO HE			
	Parametric		Nonparametric
	Linear	Quadratic	
	BW: 2.0-3.0		BW: Optimal
Eligible	0.004	0.001	-0.024
	(0.009)	(0.014)	(0.021)
	BW: 2.25-2.75		
Eligible	0.005	-0.013	
	(0.013)	(0.020)	

Implications

- **Loss of financial aid between 1st and 2nd year is not associated with decreased retention in higher education**
- **Some Evidence that retaining financial eligibility increased transfer within Missouri public higher education system**
- **Unknowns at this point:**
 - How do institutions respond with financial aid packages?
 - Why do people below 2.5 GPA retain financial aid

Questions?

Thank you!

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Motivation – Prior Literature

- **Generally, losing aid due to academic criteria reduces success**
 - Pell grant and SAP - reduces retention and success
 - Schudde & Scott-Clayton (2016) – 4-year
 - Scott-Clayton & Schudde (2019) – 2-year
 - Merit-based aid & GPA – decreased engagement in college
 - Carruthers and Özek (2016)
- **Contribution of our study**
 - GPA cutoff for needs-based aid occurs away from the SAP requirement
 - SAP criteria (2.0 GPA) confounds losing aid and academic probation

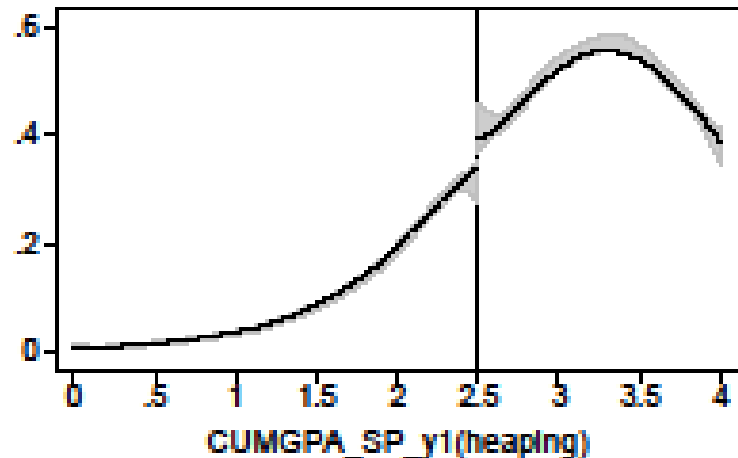
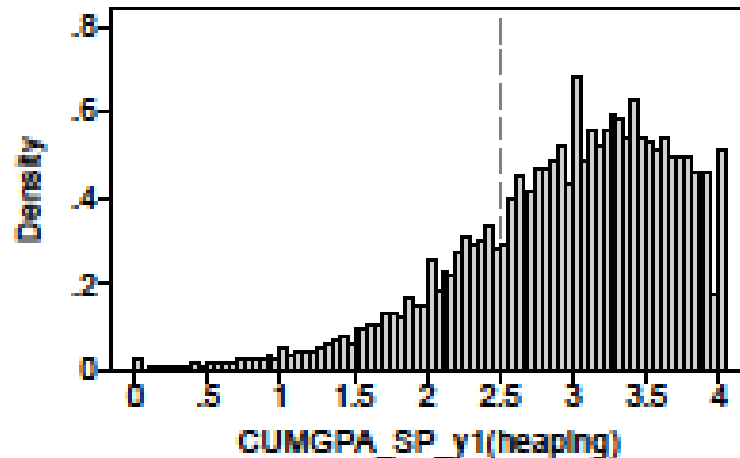
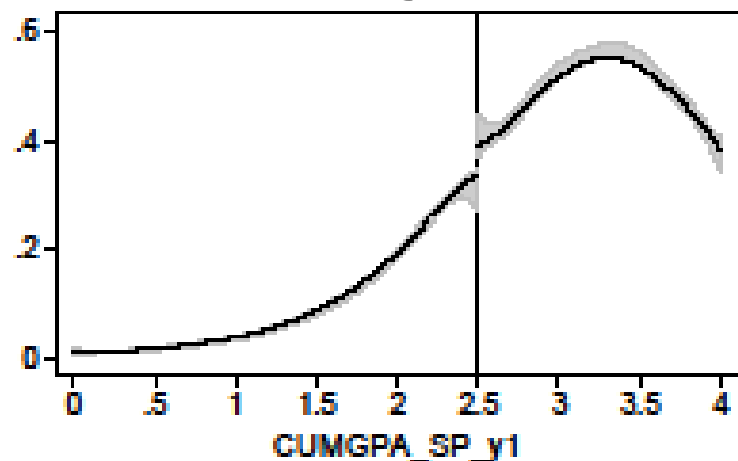
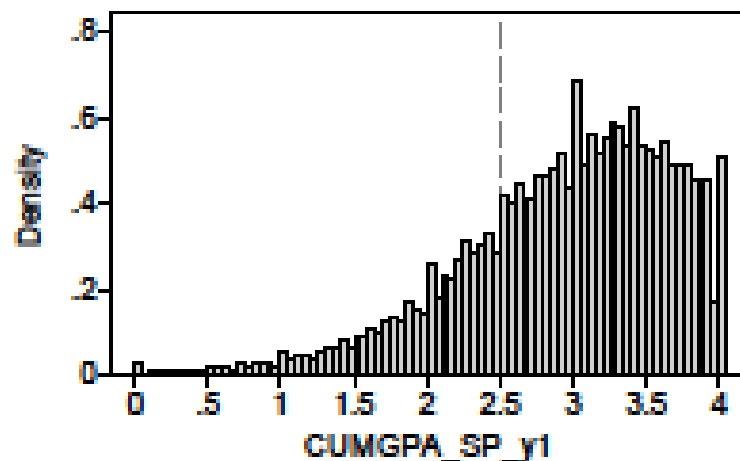
Empirical Strategy - Design

• Regression Discontinuity Design - Advantages

- RDD approximates an experiment at the cutoff point, thus, causal inference can be made
 - Intuition: RDD compares very similar subjects (based upon the forcing variable) who receive very different treatments.
 - Intuition: Random error in the measurement of the forcing variable separates subjects with similar unobserved attributes to receive treatment or not
- RDD allows you to get a causal estimate of a program effect without having to randomly hold back treatment to subjects who would likely benefit from that treatment

Empirical Strategy - Assumptions

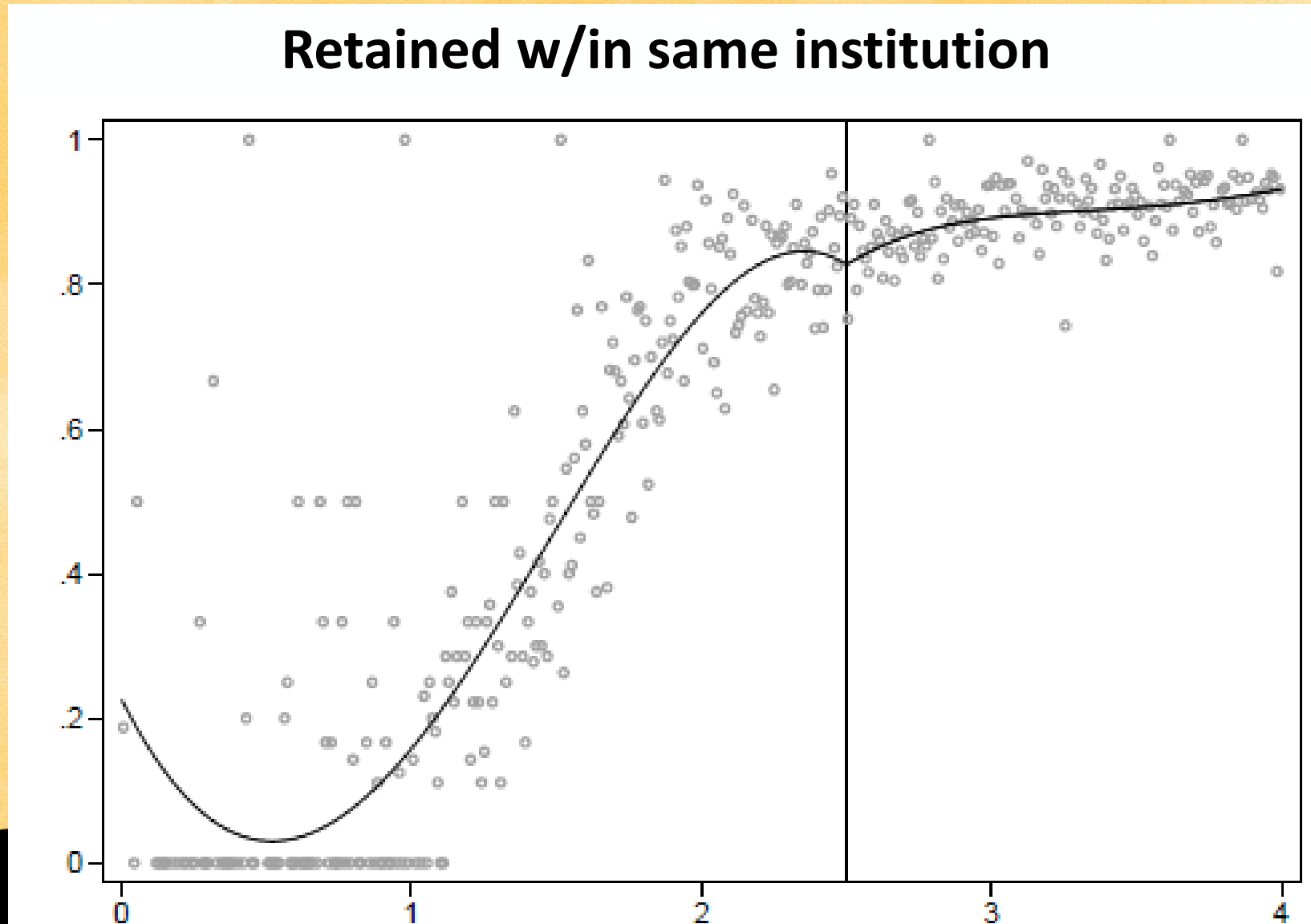
EX: Missouri State University



1. No manipulation of the forcing variable
 - Some institutions show manipulation and others do not.



Findings – Retention in Same Institution



Findings – Retention in MO Public HE

