



Out-of-State Enrollment (NRS) Caps and Student Outcomes in the UNC System

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Division of Strategy and Policy

The University of North Carolina System

UNC System Context

UNC System

- 16 diverse public universities and 1 high school
 - 5 HBCU's and 1 historic American Indian university
- Board of Governors
 - Governing body for System
 - Sets System-wide policies



Enrollment Caps

Timeline of Cap Increases

	Fall 1988-Fall 2020	Fall 2021	Fall 2022	Fall 2023	Fall 2025
ASU	18%	18%	18%	18%	18%
ECU	18%	18%	18%	25%	25%
ECSU	18%	25%	50%	50%	50%
FSU	18%	25%	25%	25%	25%
NC A&T	18%	25%	35%	35%	35%
NCCU	18%	25%	35%	35%	35%
NCSU	18%	18%	18%	18%	18%
UNCA	18%	18%	18%	25%	35%
UNC-CH	18%	18%	18%	18%	18%
UNCC	18%	18%	18%	18%	18%
UNCG	18%	18%	18%	25%	25%
UNCP	18%	18%	18%	25%	25%
UNCW	18%	18%	18%	18%	18%
WCU	18%	18%	18%	25%	25%
WSSU	18%	25%	25%	25%	35%
Indicates a year in which the cap was raised					

Enrollment Caps

Research Questions

Impacts on Freshman Admissions and Performance

1. How did changes in enrollment caps for UNC institutions **impact applicants, admits, and enrollment numbers** for **non-resident** and **resident students** at institutions with higher caps?
2. How did changes in enrollment caps impact the **admissions characteristics** (e.g., high school GPA, standardized test scores, high school class rank) of **incoming freshman classes**?
3. How did changes in enrollment caps impact students' **first year performance**, as measured by first-year GPA, first-year credits earned, and fall-to-fall retention rate?
4. How did changes in enrollment caps impact the **amount of institutional aid** awarded to resident students at institutions with higher caps?

Enrollment Caps

Research Questions

Workforce Implications

5. What are **non-resident students majoring** in at institutions with higher caps? Are these majors aligned with **state workforce needs**?
6. How likely are **non-resident** students to **work in North Carolina after graduation** at institutions with higher caps?

Enrollment Caps

Data and Research Design



Data: Application data for first-time undergraduate students enrolled from Fall 2011 through Fall 2024



Source: IPEDS, UNC Student Data Mart and NC Department of Commerce



Method: Descriptive Analysis and Causal Inference

Enrollment Caps

Research Questions

How did changes in enrollment caps for UNC institutions impact **applicants, admits, and enrollment numbers** for **non-resident** and **resident** students at institutions with higher caps?

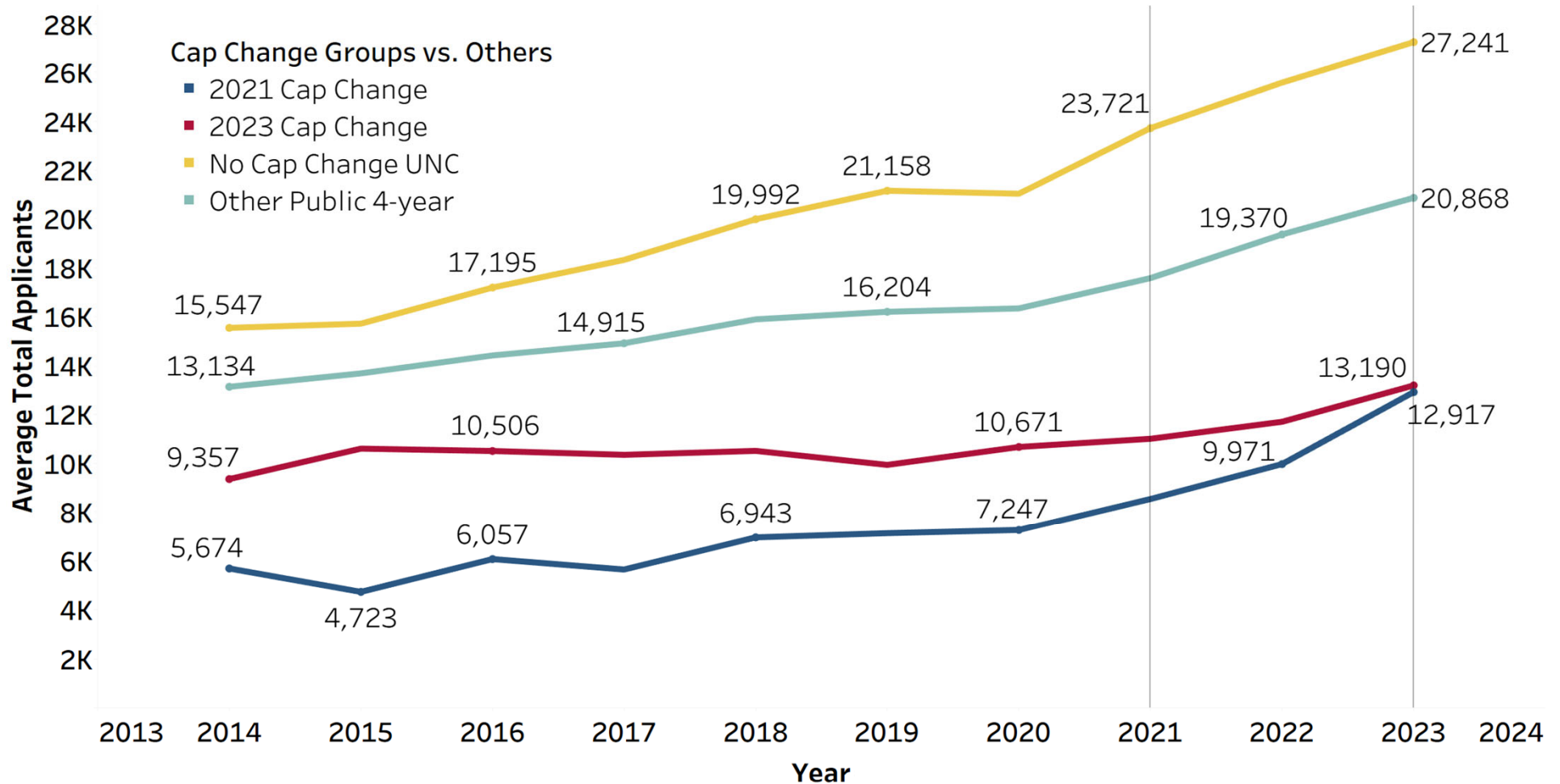
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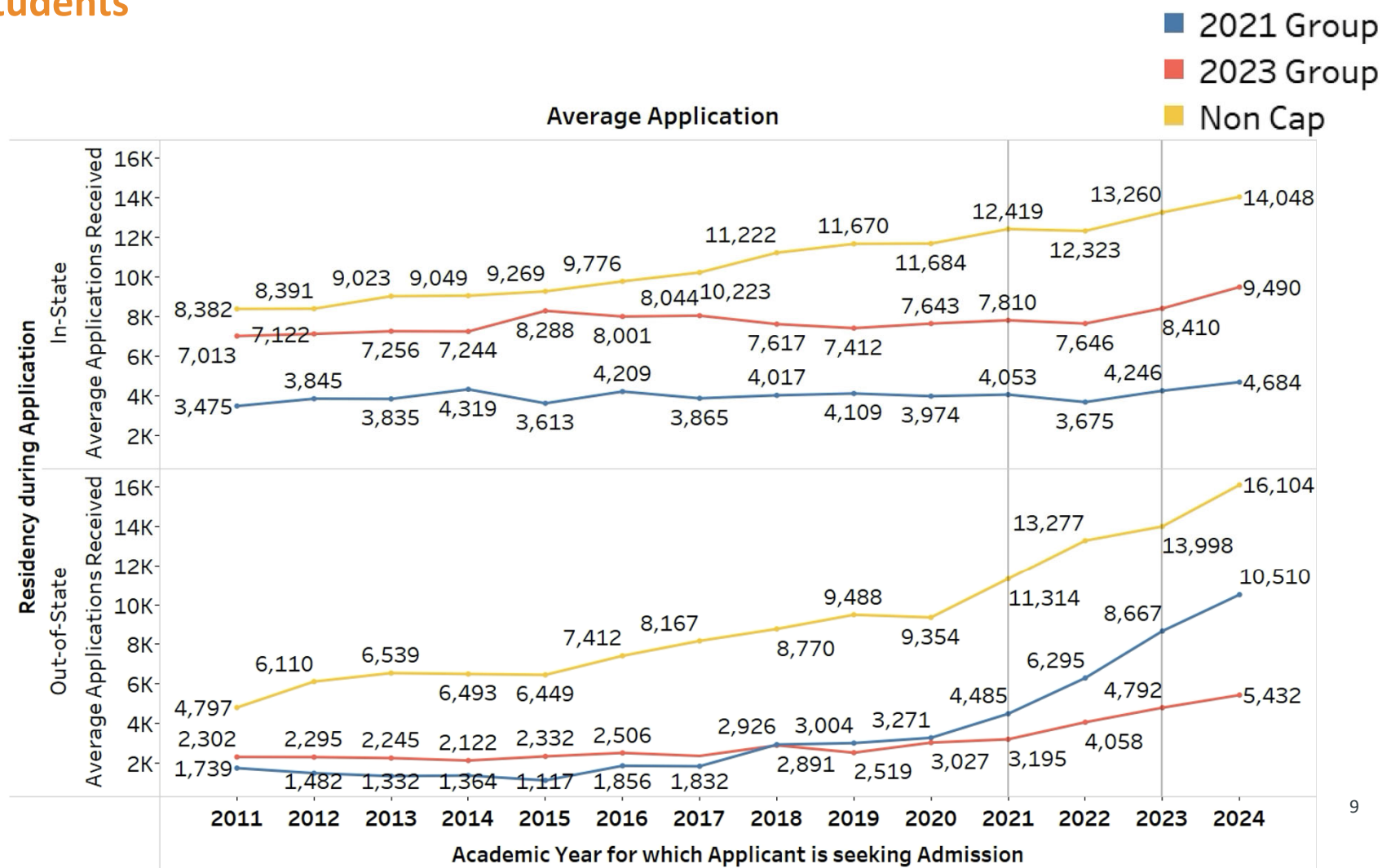
Enrollment Caps: Trends in Applications

Applications across all institutions have **increased** in recent years



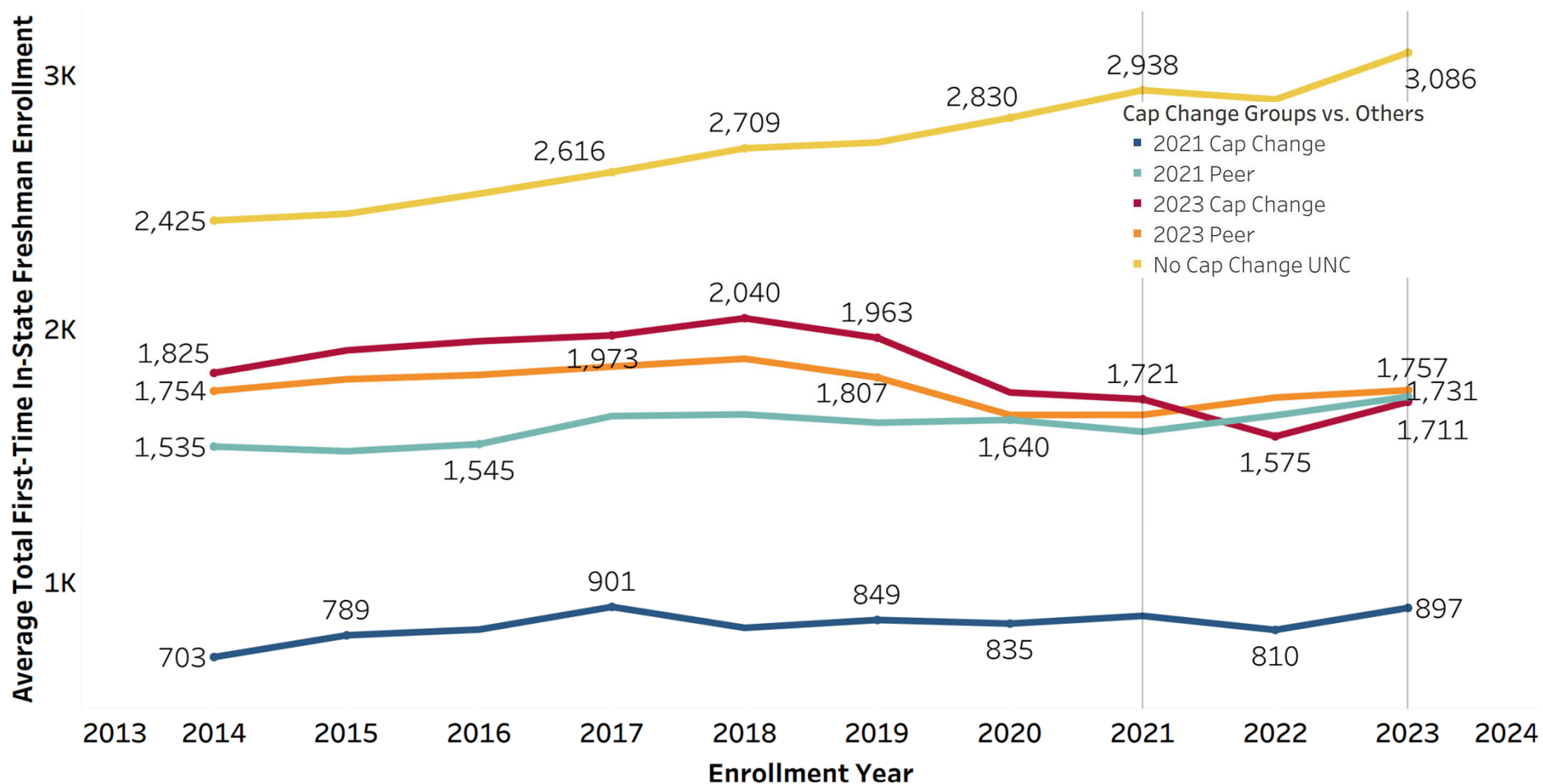
Enrollment Caps: Trends in Application

Applications increased at all UNC institutions – **especially from out-of-state students**



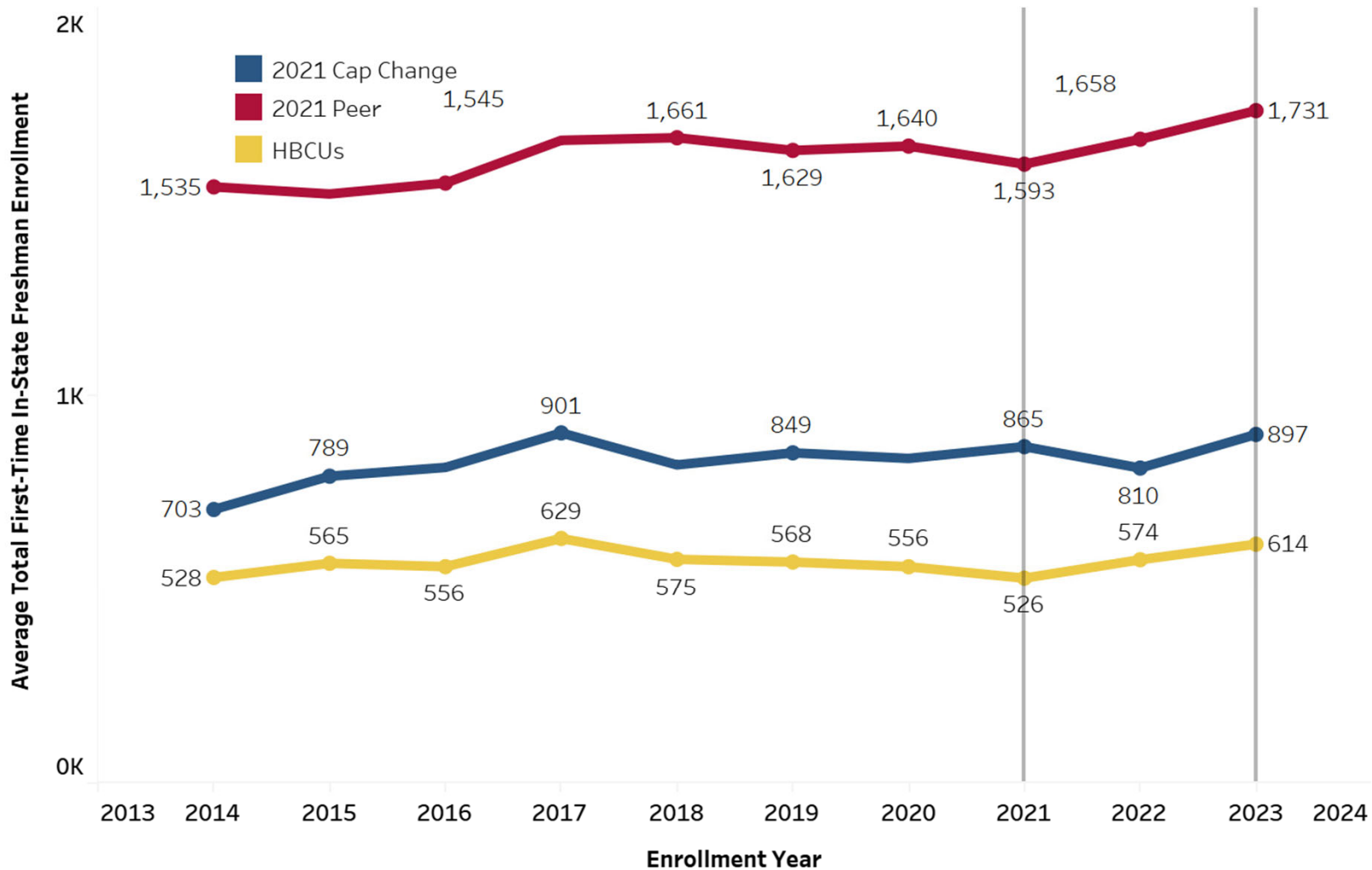
Enrollment Caps: Cap Change vs. Peers

Peer institutions have similar trends in **in-state** enrollment at **cap-change institutions**



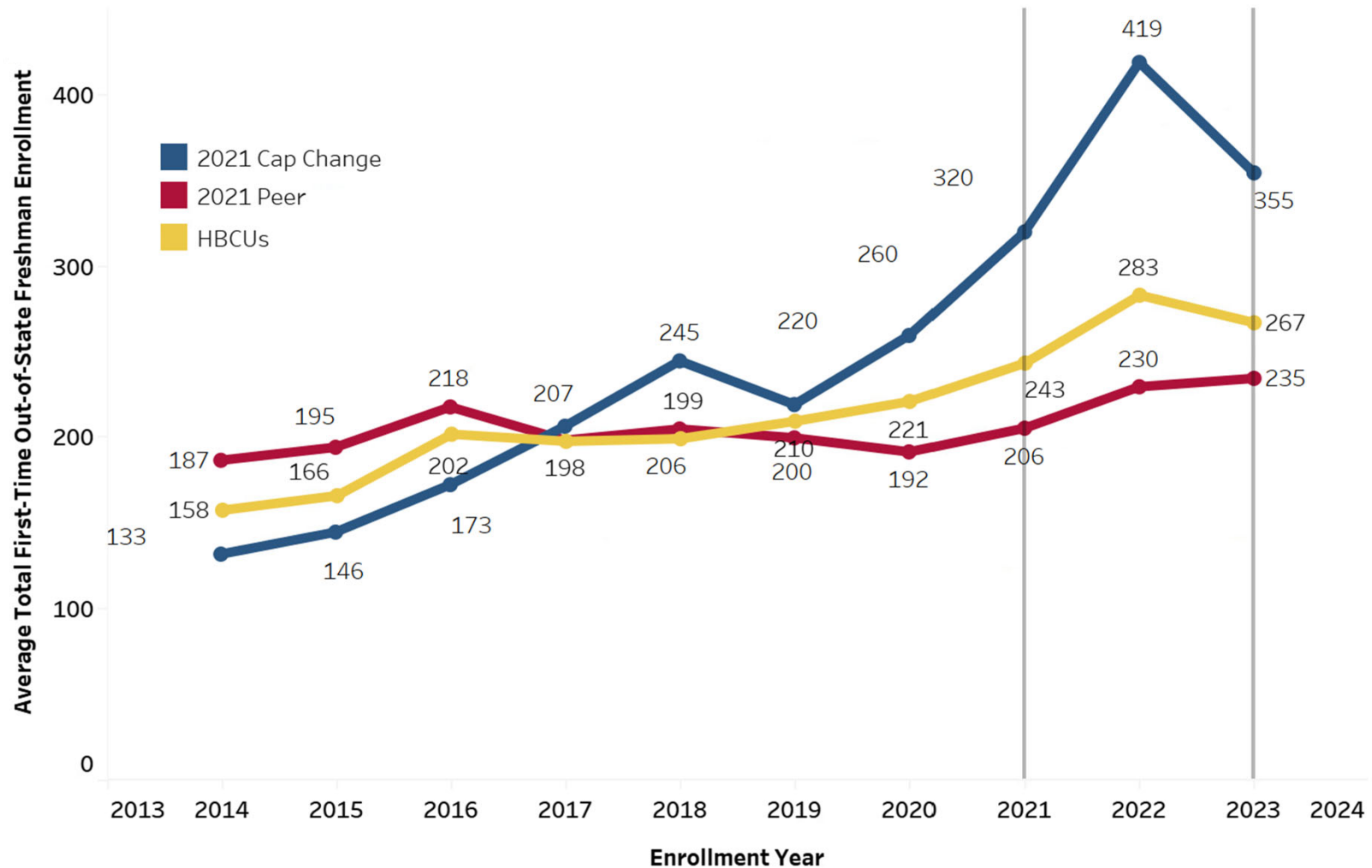
Enrollment Caps: HBCUs vs. 2021 Groups

For in-state enrollment, **2021 cap-change, peers, and HBCUs** have a similar pattern over time



Enrollment Caps: HBCUs vs. 2021 Groups

The 2021 cap-change institutions exhibit a **distinct pattern** from the other groups on **out-of-state enrollment**



Enrollment Caps

Research Questions

How did changes in enrollment caps for UNC institutions impact **applicants, admits,** and **enrollment numbers** for **non-resident** and **resident** students at institutions with higher caps?

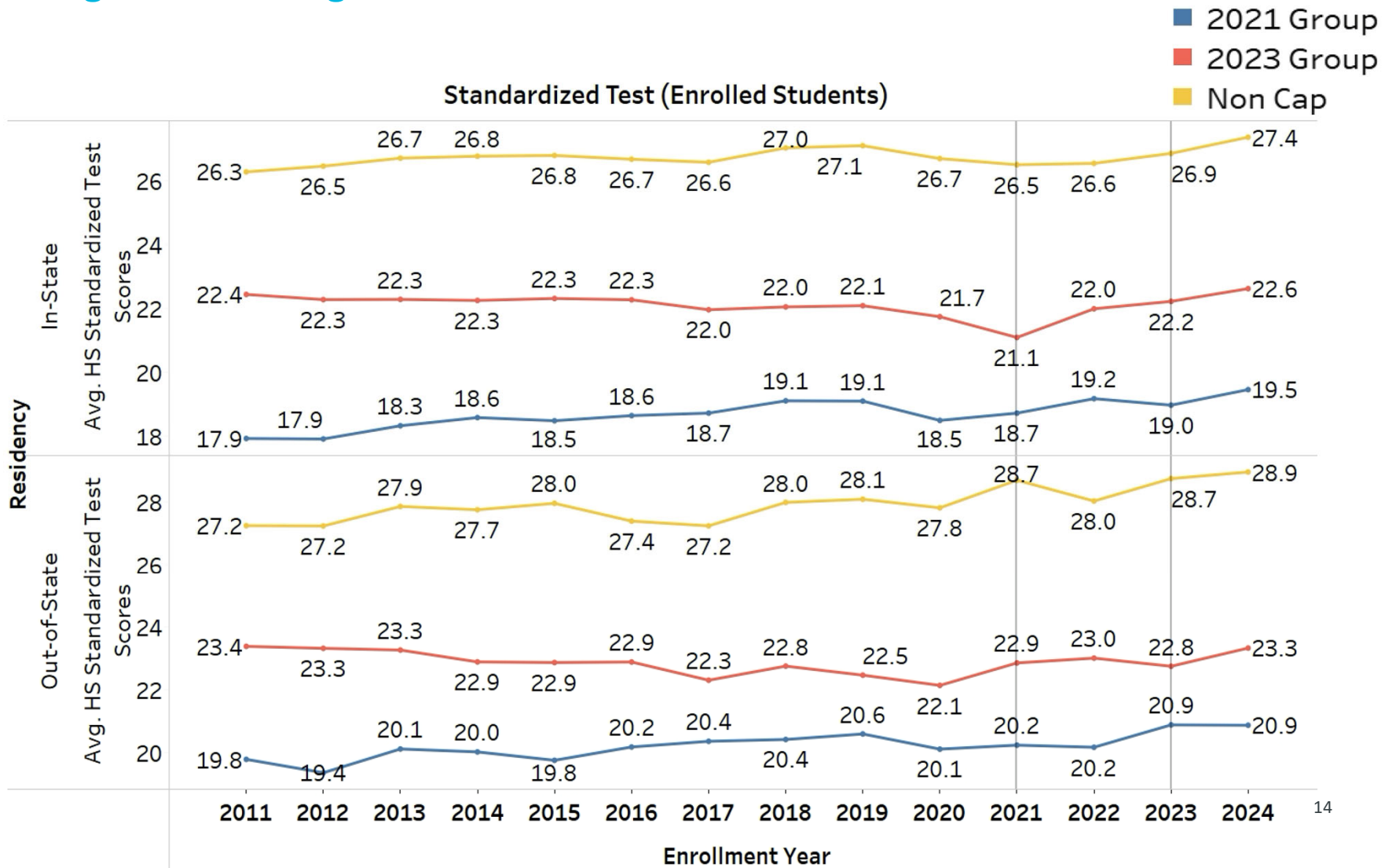
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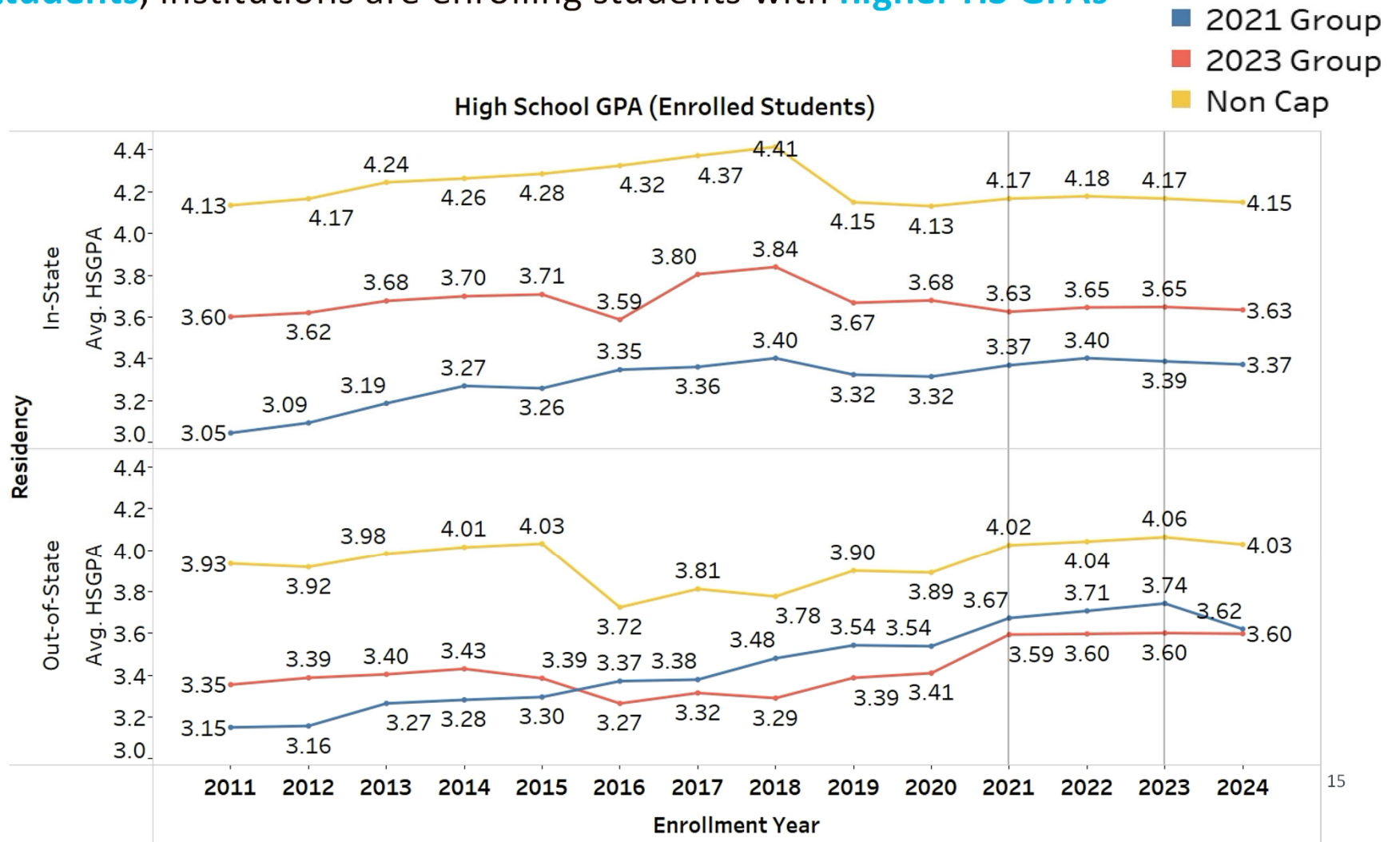
Enrollment Caps: Test Scores of Enrolled Students

No significant changes in standardized test scores for enrolled students



Enrollment Caps: HS GPA of Enrolled Students

No significant changes in HS GPA for in-state students; for **out-of-state students**, institutions are enrolling students with **higher HS GPAs**



Enrollment Caps

Research Questions

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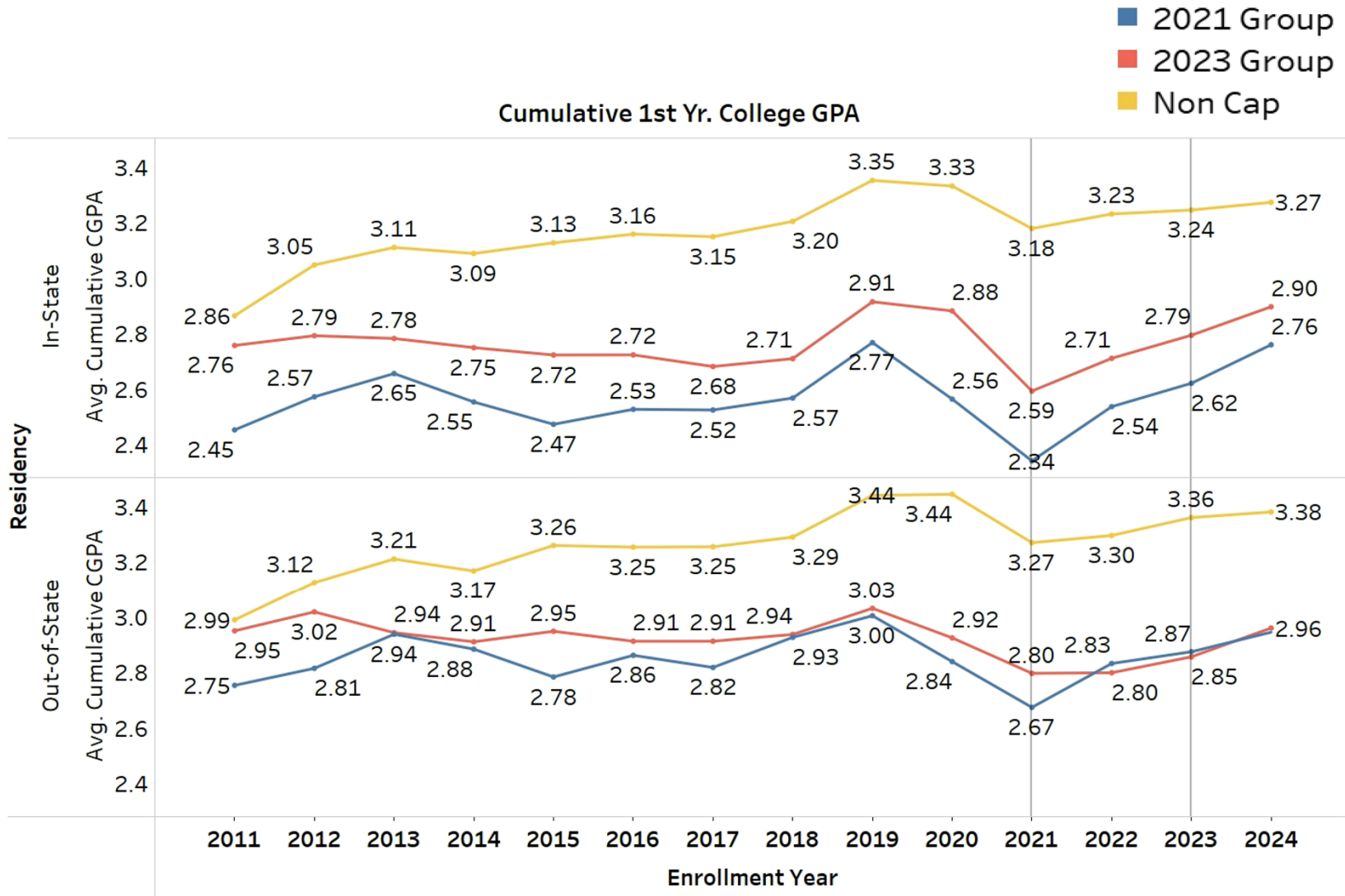
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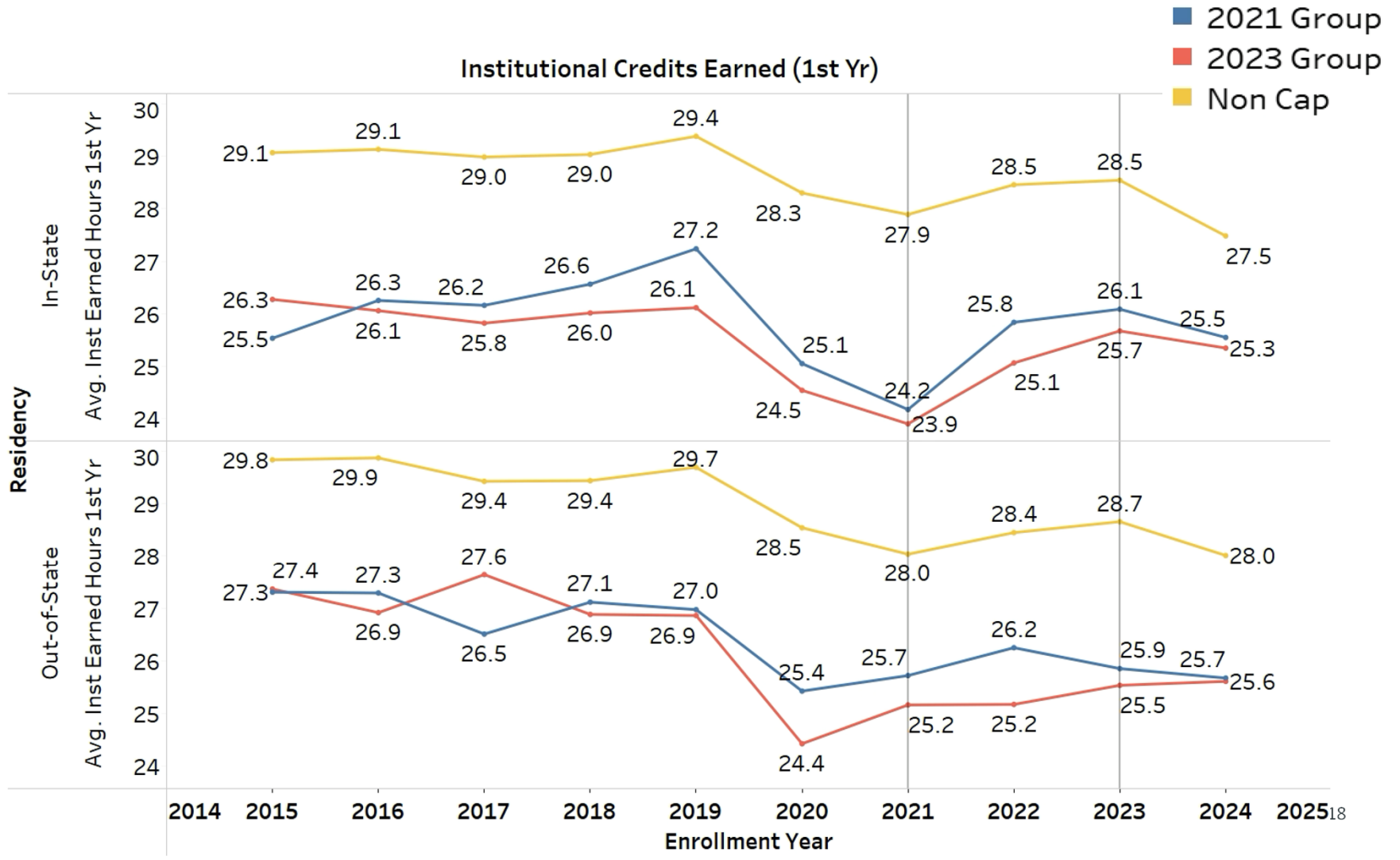
Enrollment Caps

No meaningful difference in **first-year college GPA**



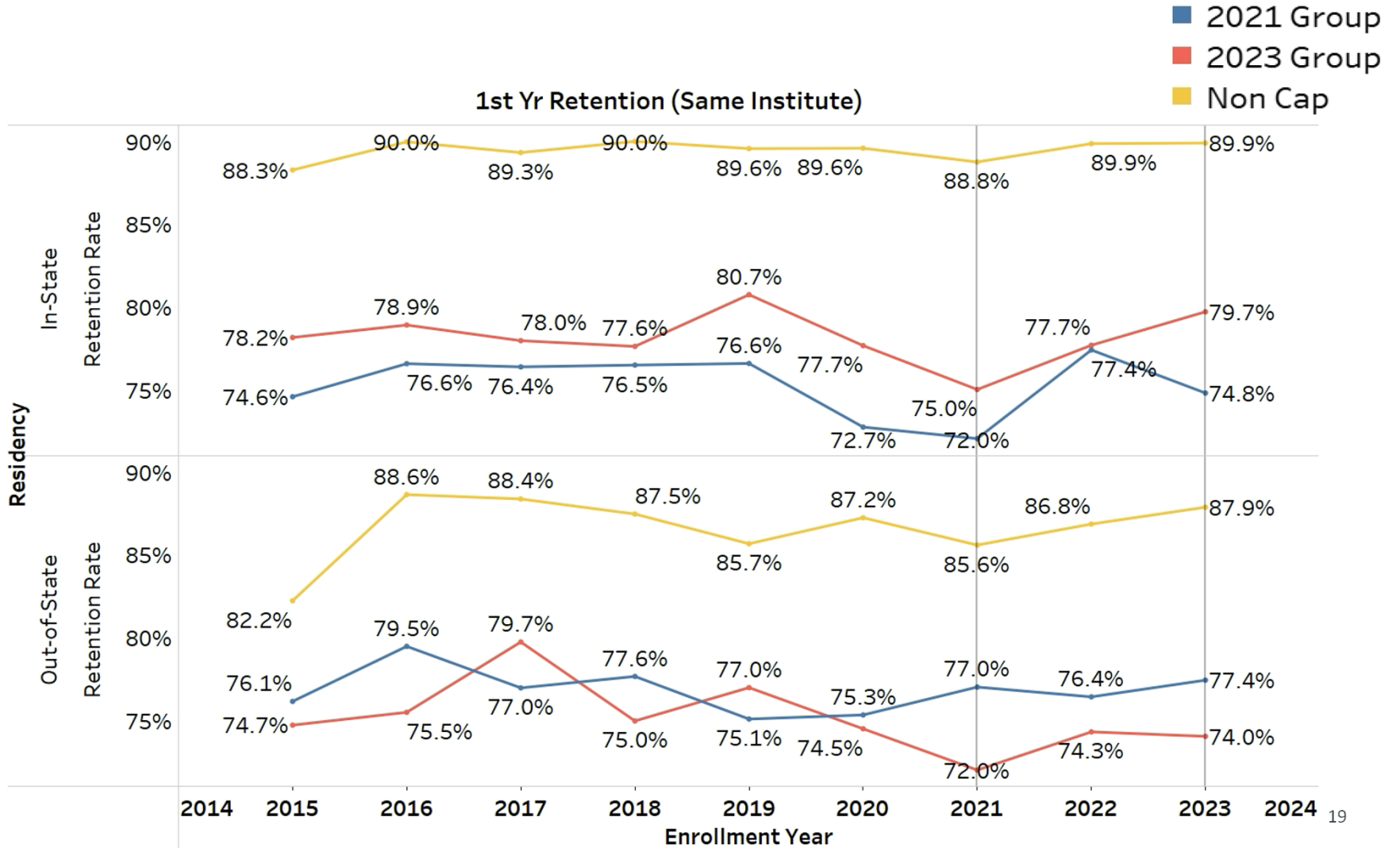
Enrollment Caps

No meaningful difference in **credits earned at the end of first year**



Enrollment Caps

No meaningful difference in **fall-to-fall retention rates**



Enrollment Caps

Research Questions

How did changes in enrollment caps for UNC institutions impact **applicants, admits, and enrollment numbers** for **non-resident** and **resident** students at institutions with higher caps?

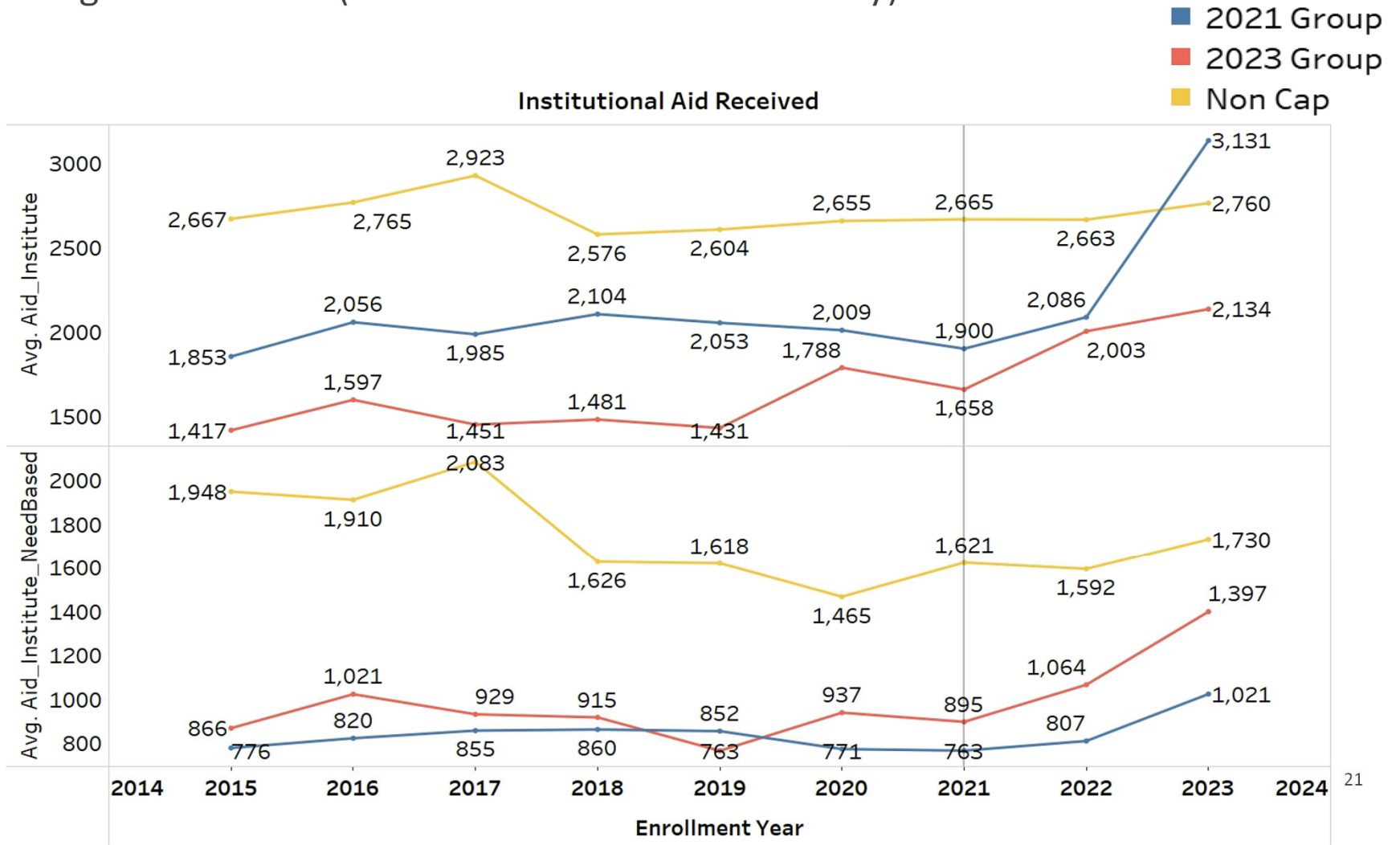
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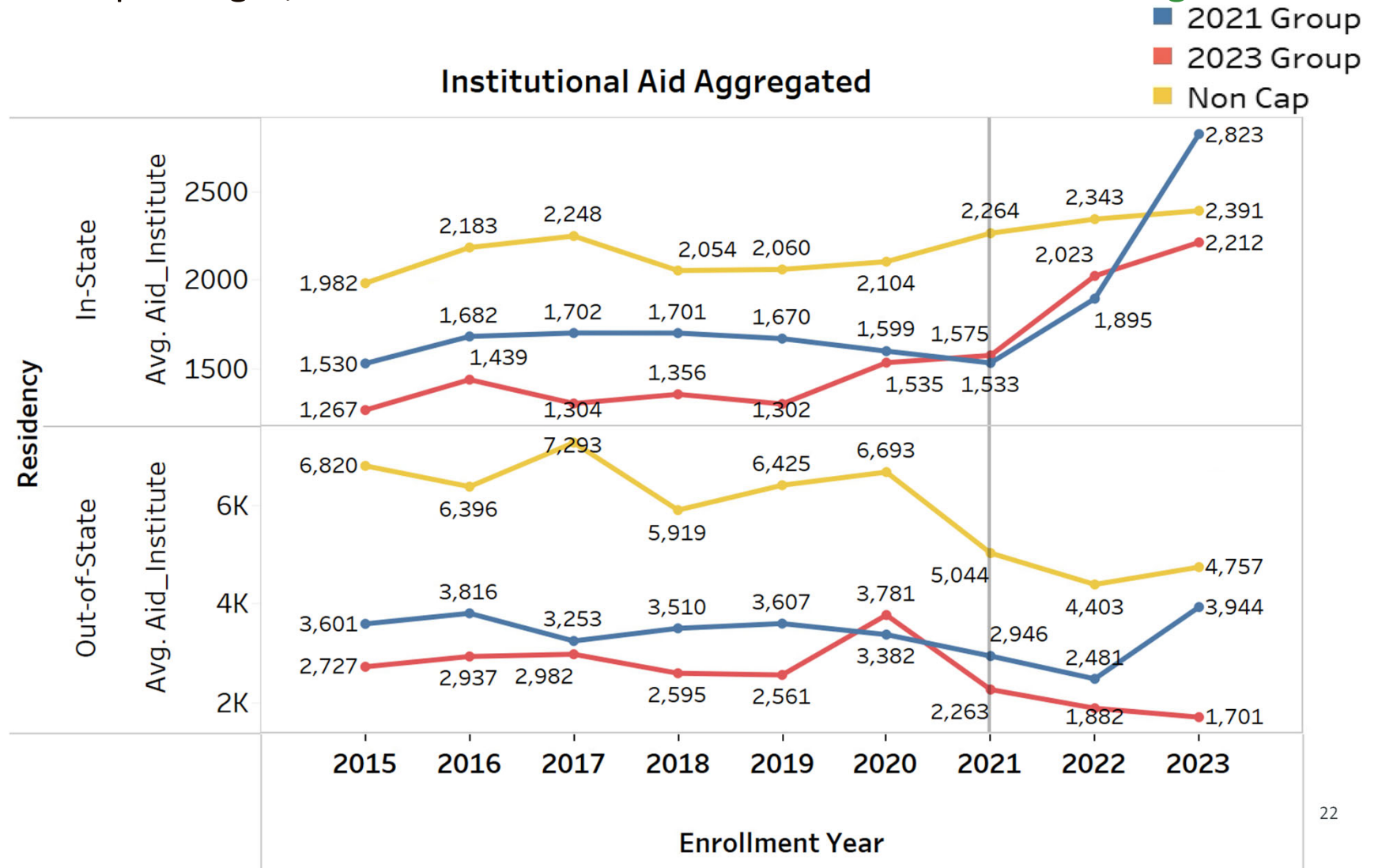
Enrollment Caps

Average institutional aid awarded increased for both the 2021 and 2023 cap-change institutions (for all aid and need-based only)



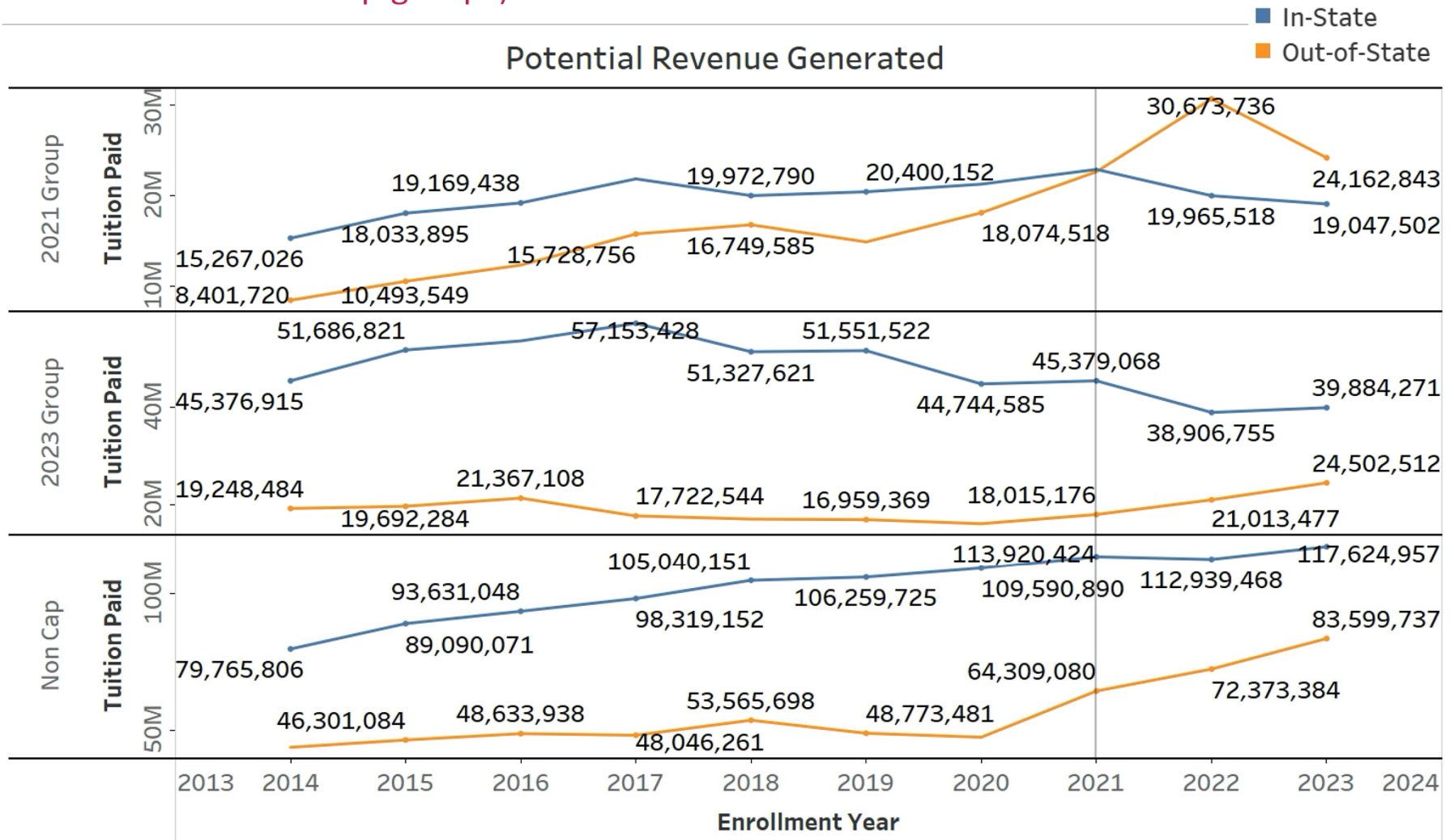
Enrollment Caps

Post cap changes, **in-state students did not receive less aid on average**



Enrollment Caps

- Potential Revenue from out of state students increased for all groups (especially 2021 and non-cap groups)



Enrollment Caps

Research Questions

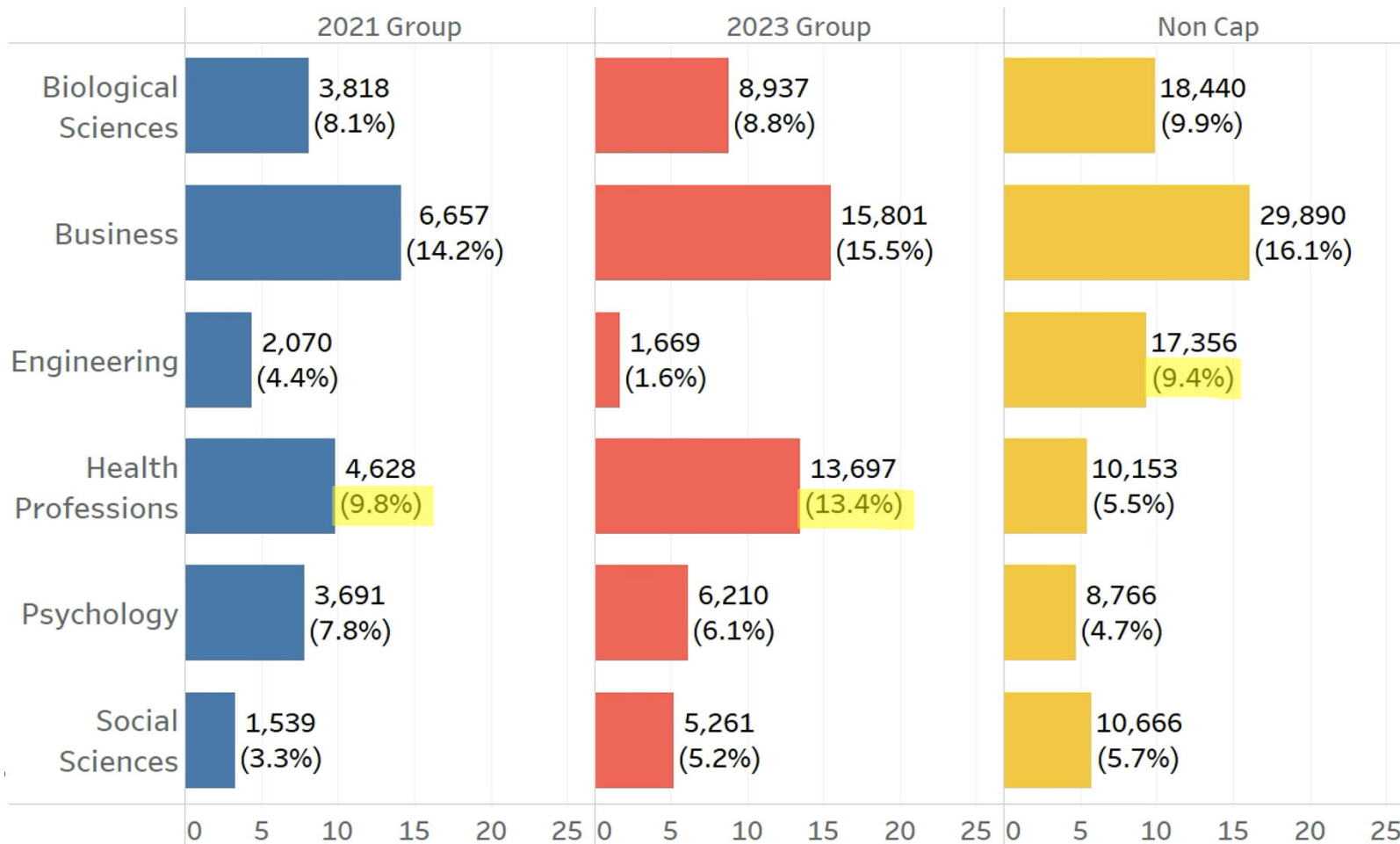
What are non-resident students majoring in at institutions with higher caps? Are these majors aligned with state workforce needs?

How likely are non-resident students to work in North Carolina after graduation at institutions with higher caps?

Enrollment Caps - Majors

- Based on labor demand, the six most demanded majors in NC were Business, Health Professions, Social Sciences, Engineering, Biological Sciences and Psychology.

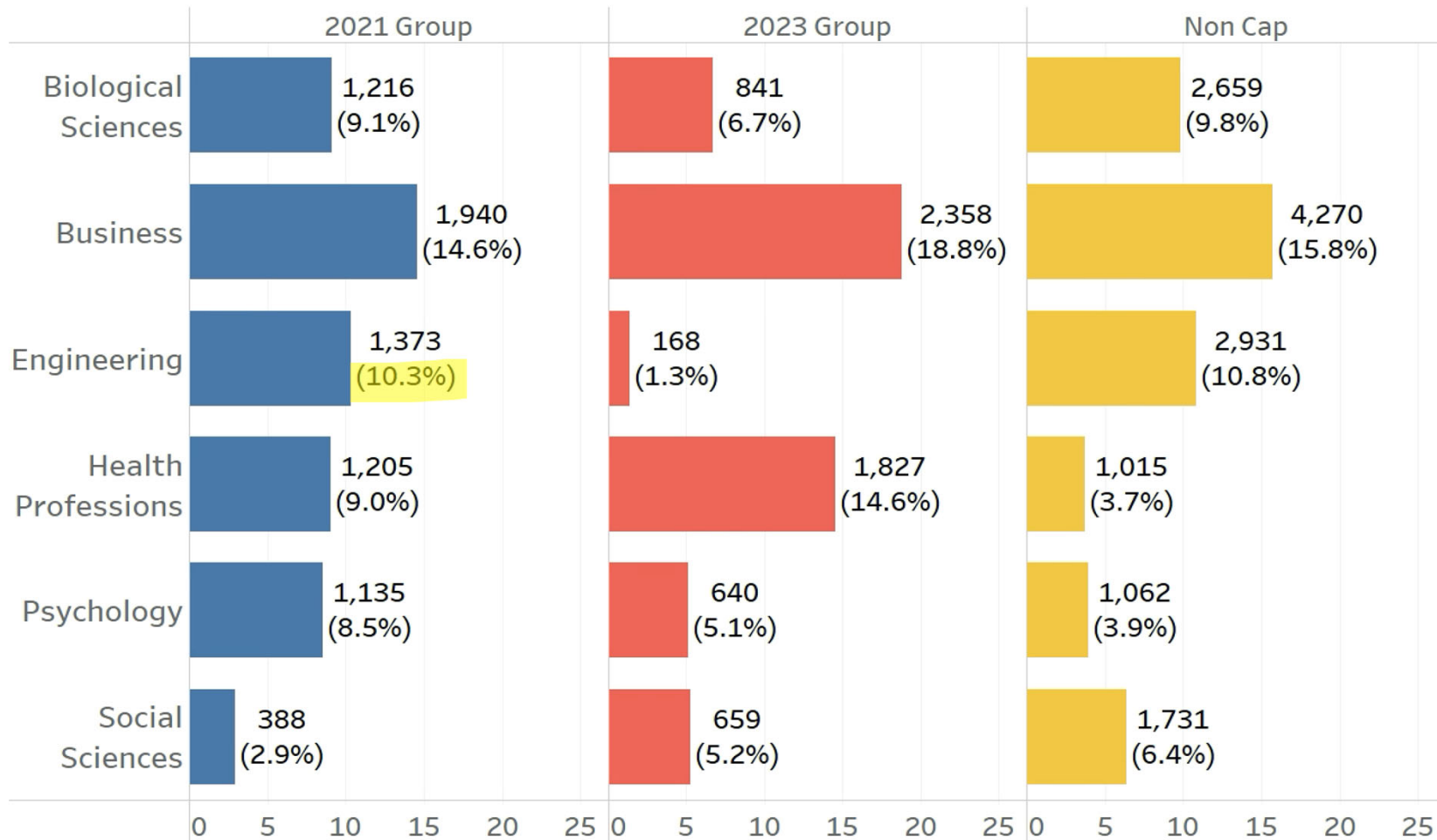
Majors by Group (2014-2024) - In-State



Enrollment Caps - Majors

- A higher share of out-of-state students at 2021 group (HBCU) appear to be majoring in Engineering

Majors by Group (2014-2024) - Out-of-State



Enrollment Caps

Research Questions

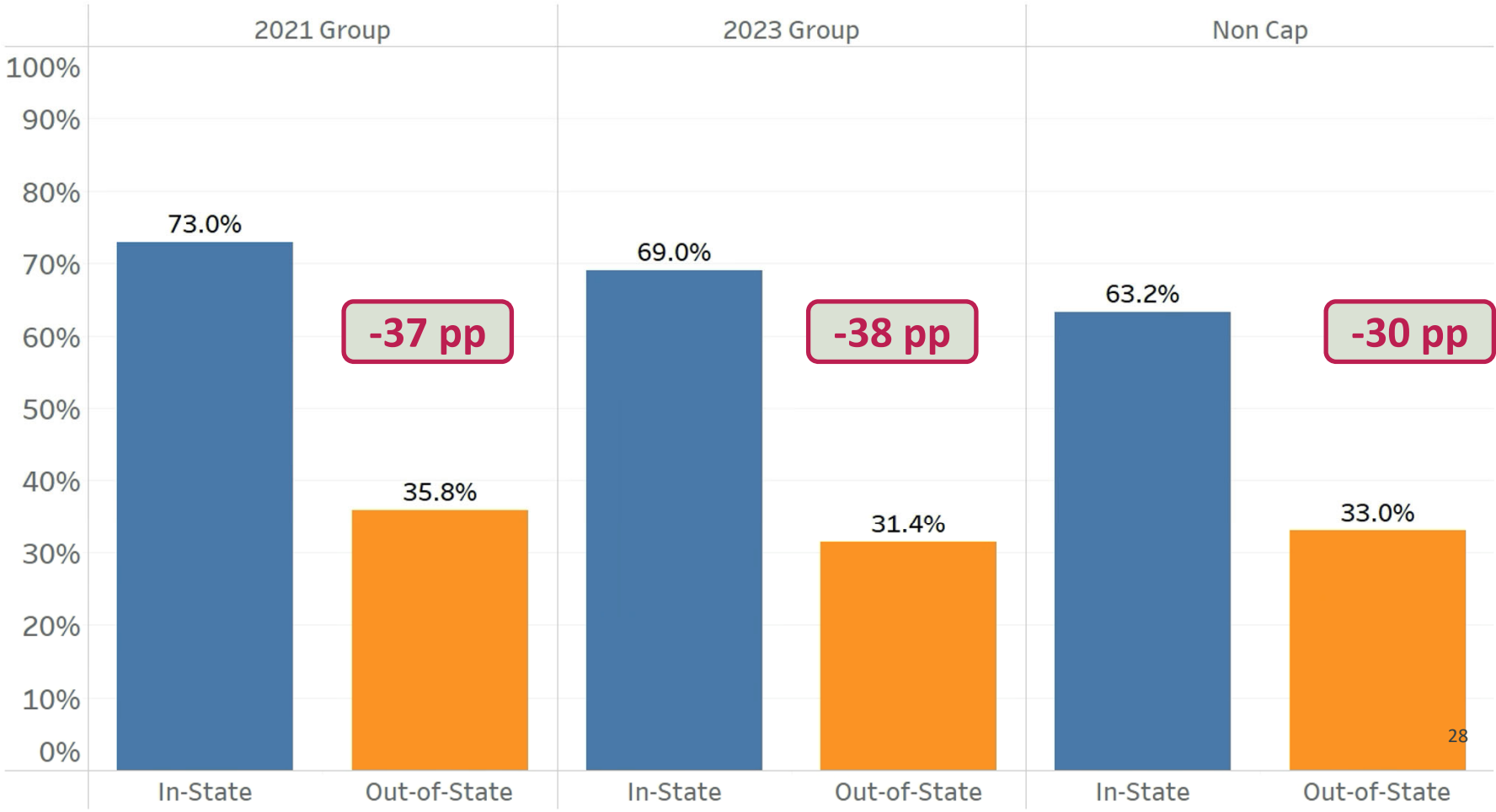
What are non-resident students majoring in at institutions with higher caps?
Are these majors aligned with state workforce needs?

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Enrollment Caps – Labor Force

- We now look at percentage of graduates working within the state for at least 3 quarters of the year immediately after graduation. [Trends similar across groups](#)

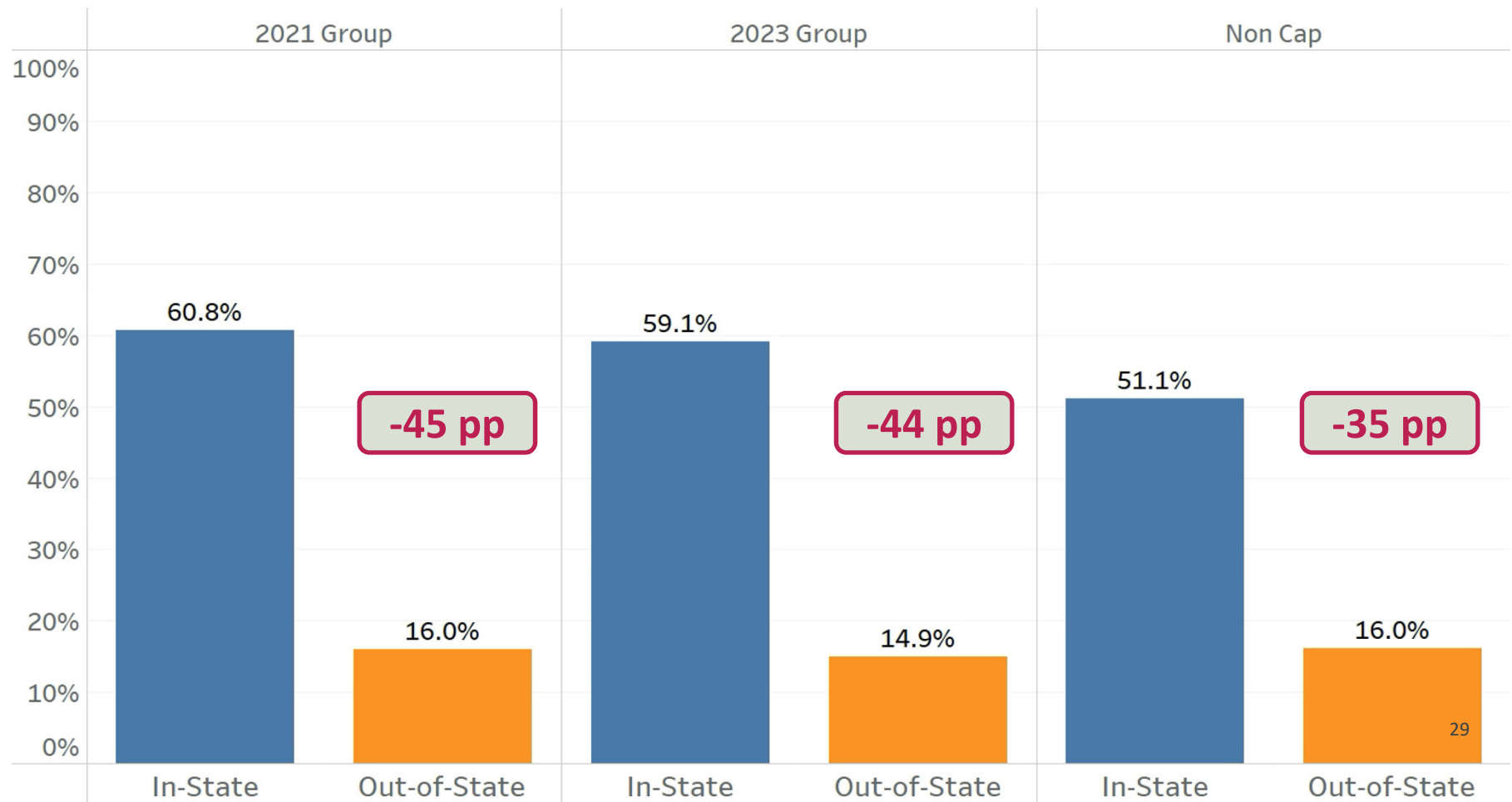
Pct. Worked atleast 75% Year after Graduation (2014-2023)



Enrollment Caps – Labor Force

- Observe similar trends for percentage of students **working at least eight quarters 3 years after graduation.**

Pct. worked atleast 75% 3 Yrs after Graduation



Summary from Descriptive Data



No clear evidence that cap changes significantly altered how colleges make admission decisions nor do we find major differences in first year outcomes



Descriptive data analysis masks many confounding effects. Naïve to base our results on these charts

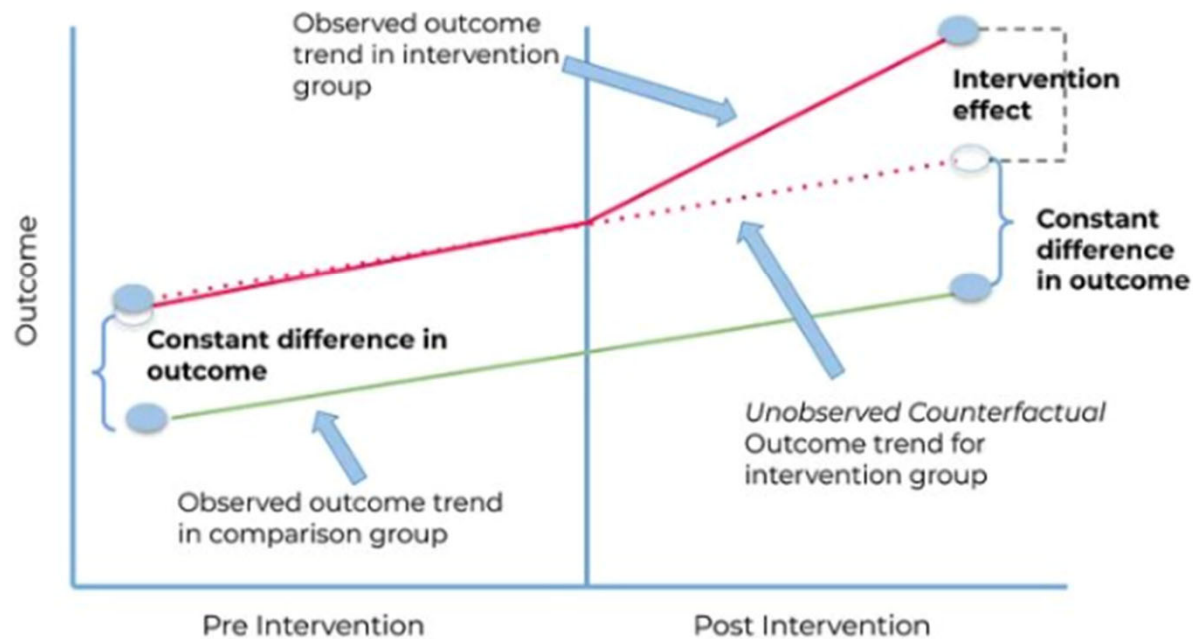


How do we go about measuring the impact of cap changes given each 16 institutes at our system are unique?

Enrollment Caps: Research Design



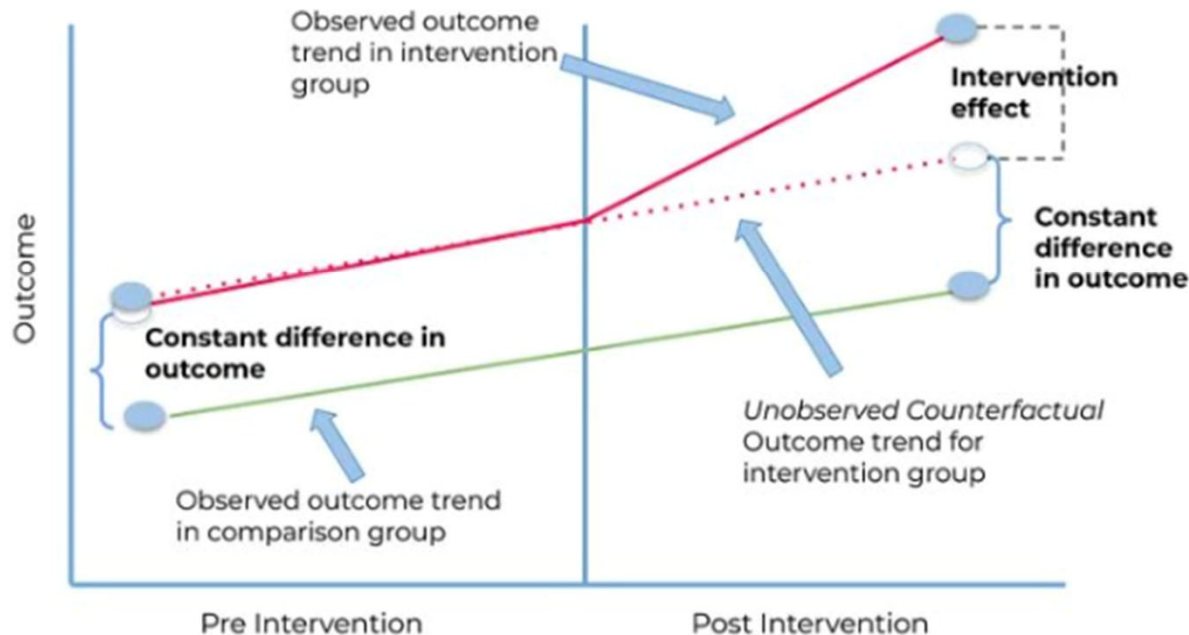
Primary Method: Differences in Differences Analysis



Enrollment Caps: Research Design



Primary Method: Differences in Differences Analysis (Staggered) - 2021 and 2023



2021 Group:
ECSU, FSU, NC A&T, NCCU,
WSSU
"Treated" in 2021

2023 Group:
ECU, UNCA, UNCG, UNCP,
WCU
*"Treated" in 2023. Serve
as control groups up until
2022.*

Enrollment Caps

Existing Literature

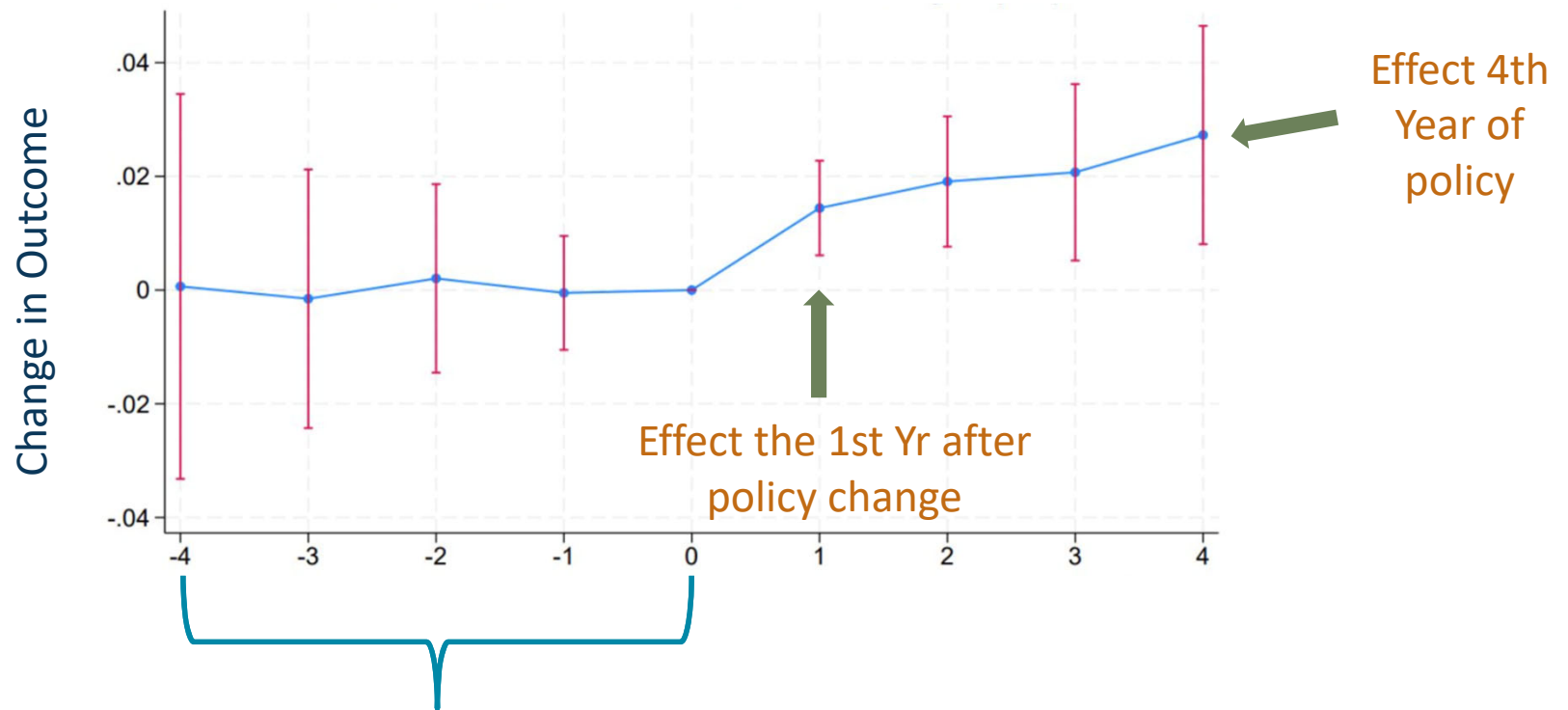
UW Madison: On October 2015, voted to remove the limit of NRS enrollments. (from 27.5 %)

Paper finds that removing a constraint on non-resident enrollment results in sharply higher tuition revenues which are used to increase financial aid with no evidence of negative impacts on resident student enrollment or academic outcomes.

Other papers (using IPEDS data) show mostly mixed results based on whether the increase in out-of-state enrollment was due to domestic students or foreign students.

Enrollment Caps

Interpretating Basic Event Study Plot



Pre-Treatment Period. Does not have any trends

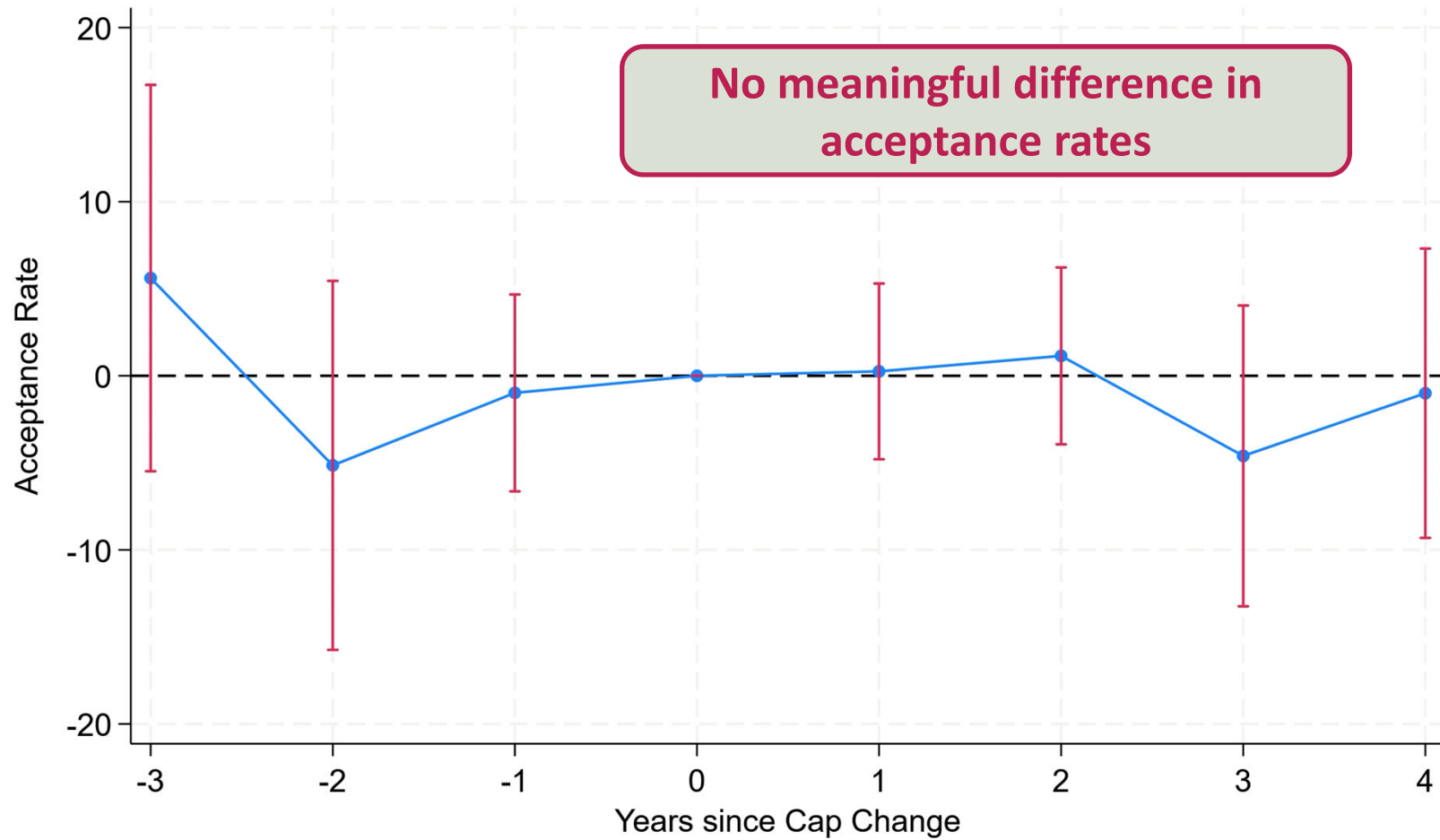
Enrollment Caps

Overview of Control Groups by Year

	2021	2022	2023	2024
Treated Group	ECSU, FSU, NC A&T, NCCU,WSSU	ECSU, FSU, NC A&T, NCCU,WSSU	2021 and 2023 groups	2021 and 2023 groups
Control Group	All other NC colleges (except UNCSA)	All other NC colleges (except UNCSA)	ASU, NCSU, UNCC, UNC- CH, UNCW	ASU, NCSU, UNCC, UNC- CH, UNCW

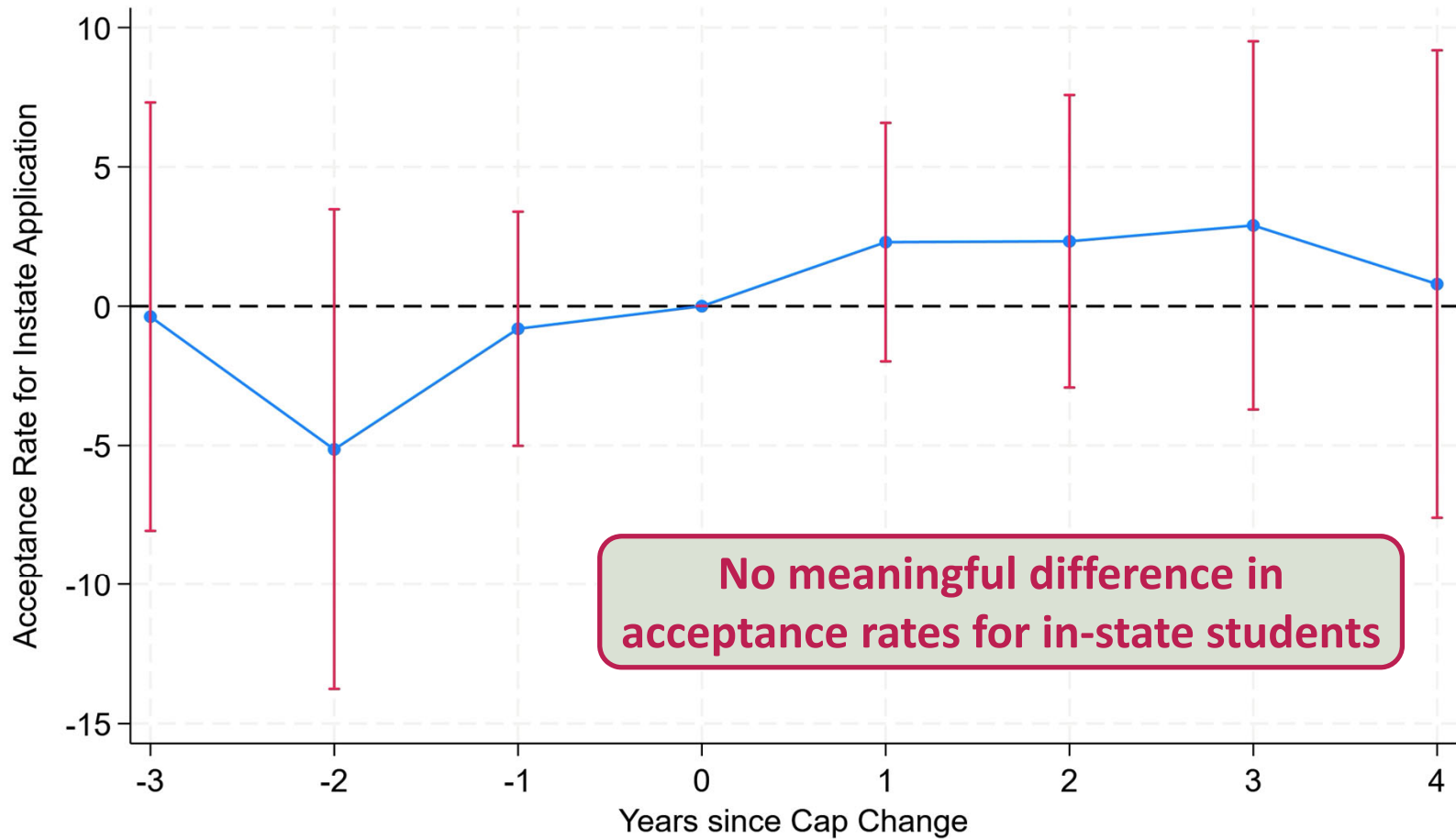
Enrollment Caps

Did Acceptance Rates Increase?



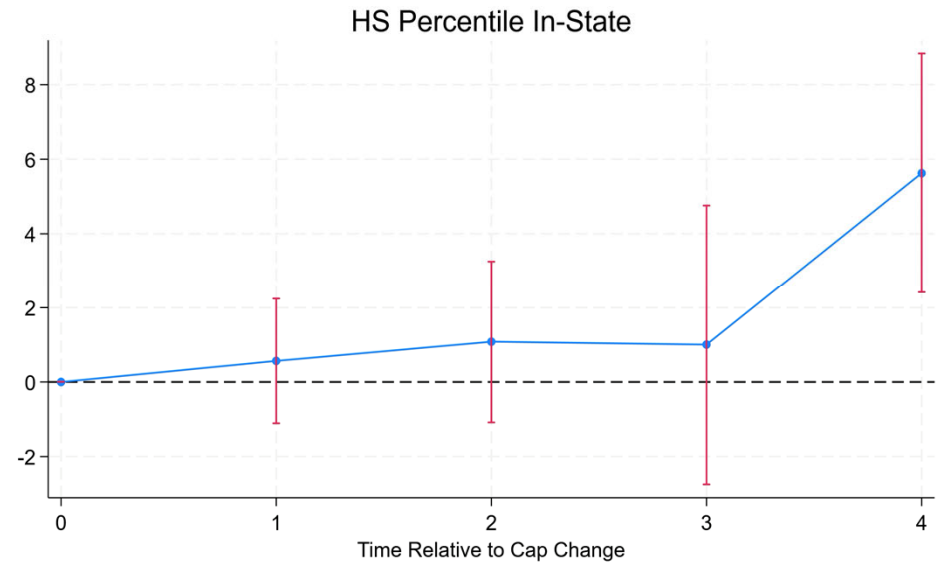
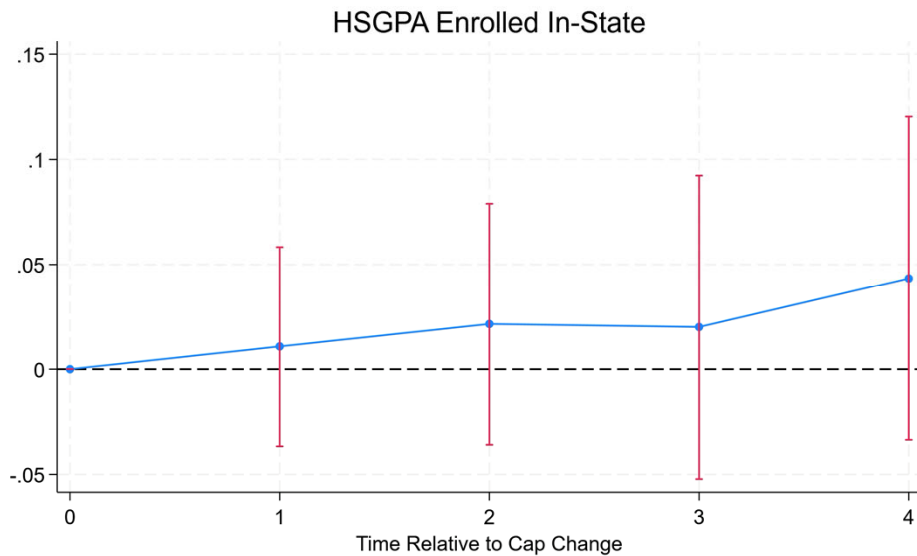
Enrollment Caps

Did Acceptance Rates Decrease for in-state applicants?



Enrollment Caps

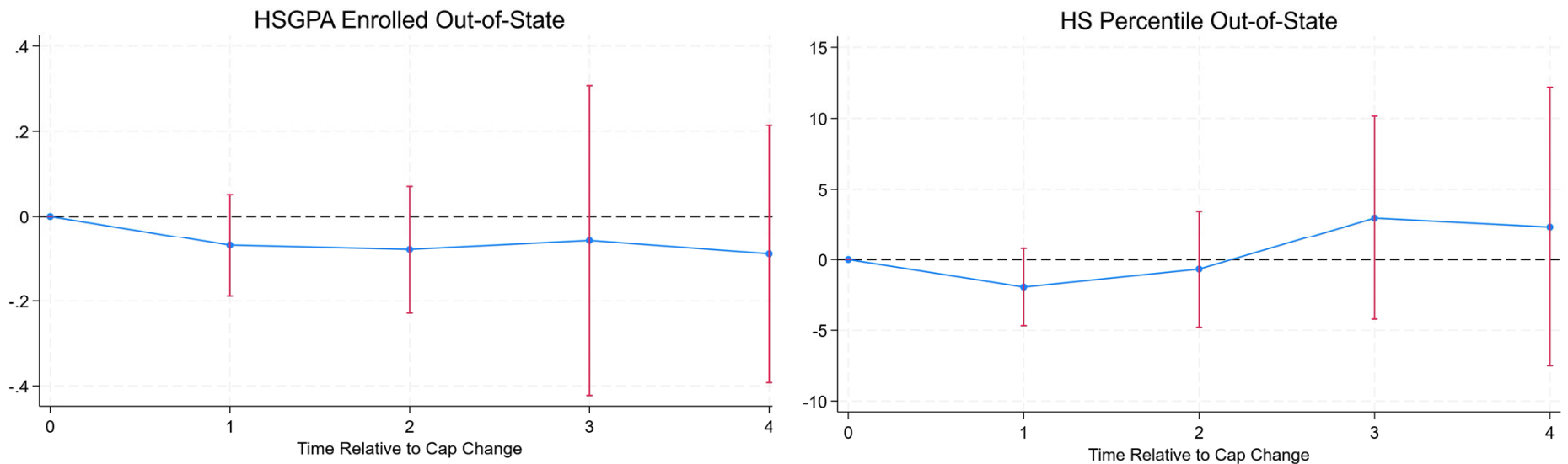
HS Characteristics of Enrolled Students Post Cap Changes



No consistent evidence that in-state students enrolled after cap changes were "less academically prepared" based on their HSGPA

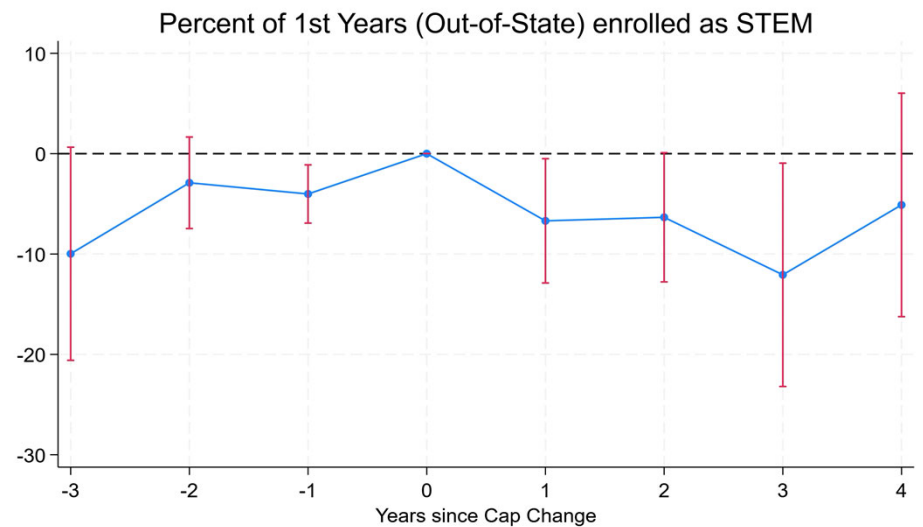
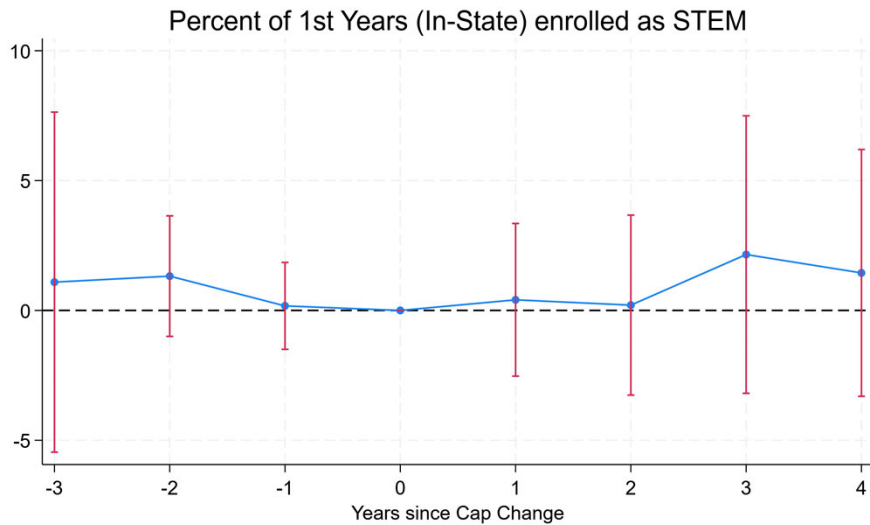
Enrollment Caps

HS Characteristics of Enrolled Students Post Cap Changes



No consistent evidence that out-of-state students enrolled after cap changes in cap change institutes were "less academically prepared" based on their HSGPA

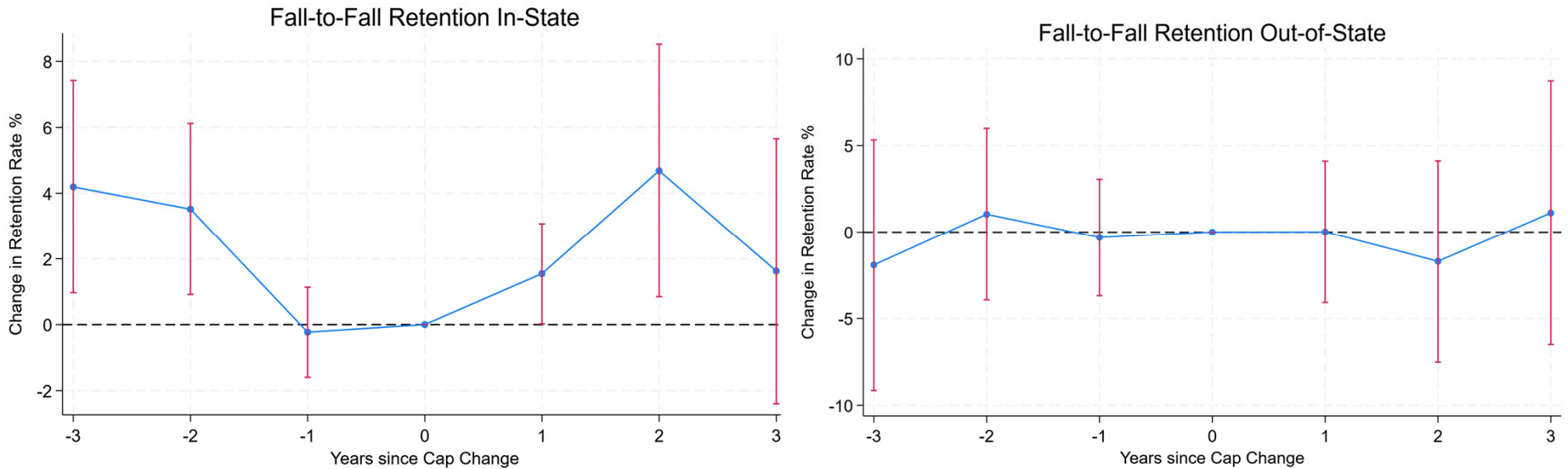
Enrollment Caps



No consistent evidence that in-state students enrolled after cap changes in cap change institutes were enrolling as STEM majors at a lower rate compared to in-state students in not yet treated institutes.

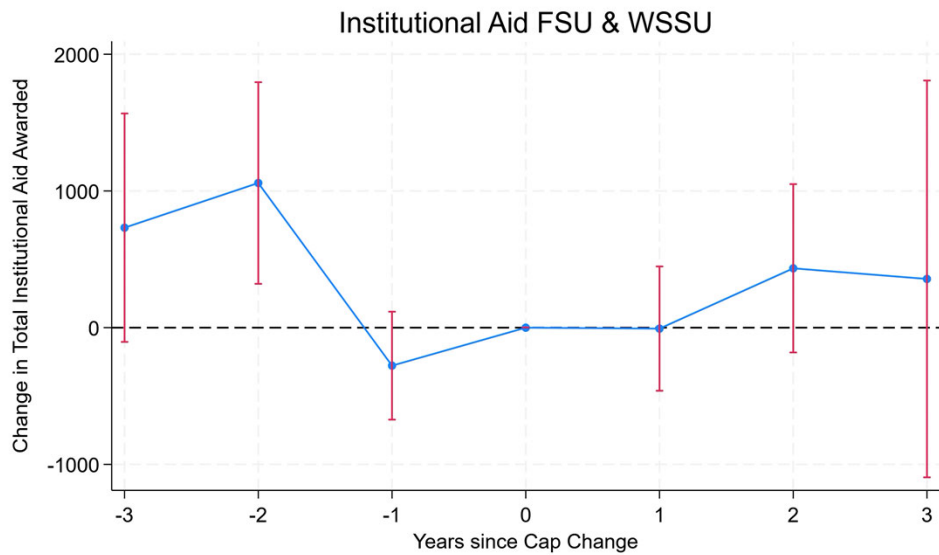
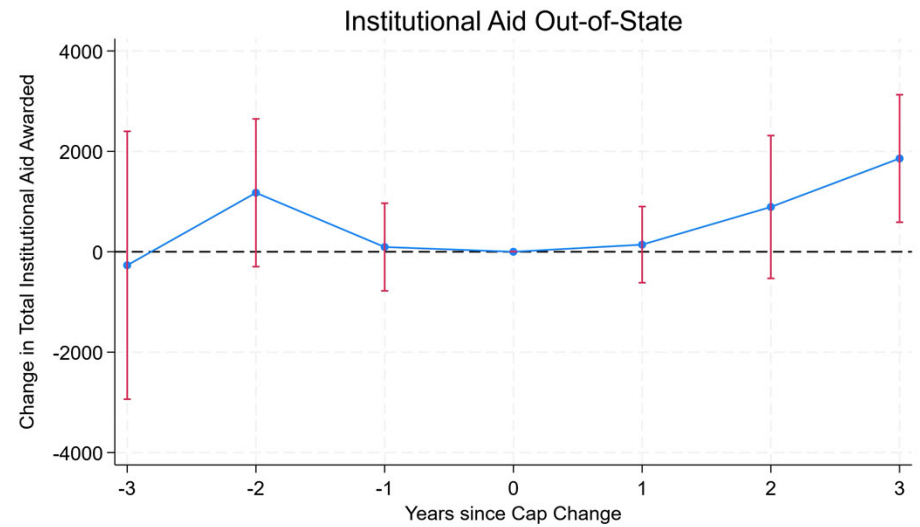
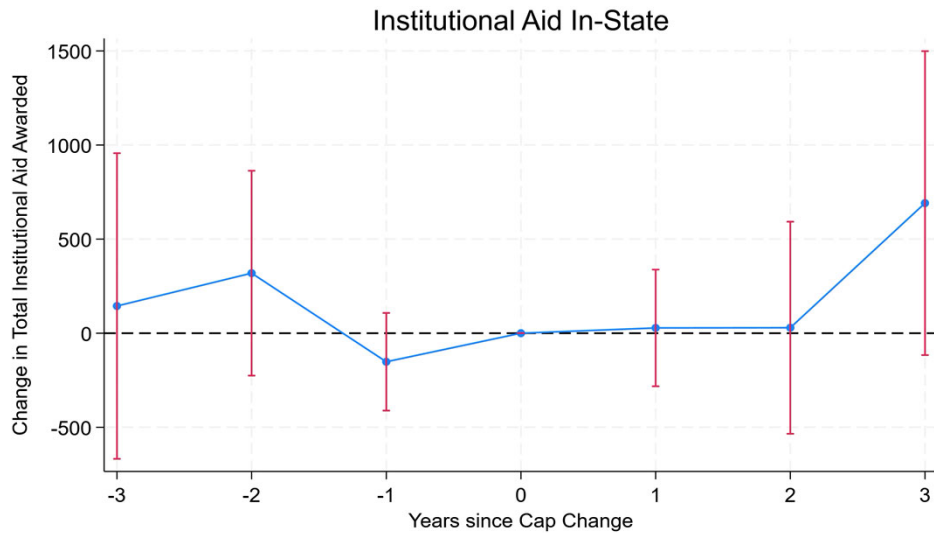
Out of state students in cap change institutes were less likely to be in STEM majors compared to out-of-state students in non-cap change schools.

Enrollment Caps



Post cap change, Fall to Fall Retention Rates increase for in-state students in cap change school. No effect on retention rates for out-of-state students.

Enrollment Caps- 1st Year Institutional Grant



NC A&T driving much of the results. 1st Yr aid dispersion does not seem to be following cap change schedule.

Enrollment Caps

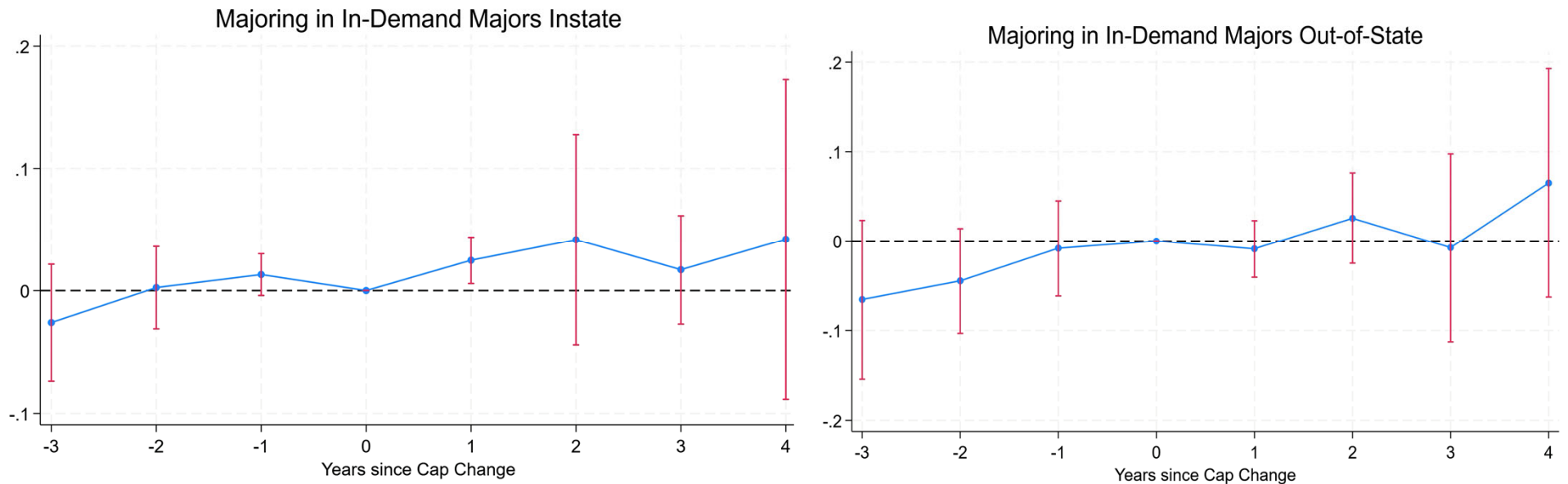
Research Questions

What are non-resident students majoring in at institutions with higher caps? Are these majors aligned with state workforce needs?

How likely are non-resident students to work in North Carolina after graduation at institutions with higher caps?

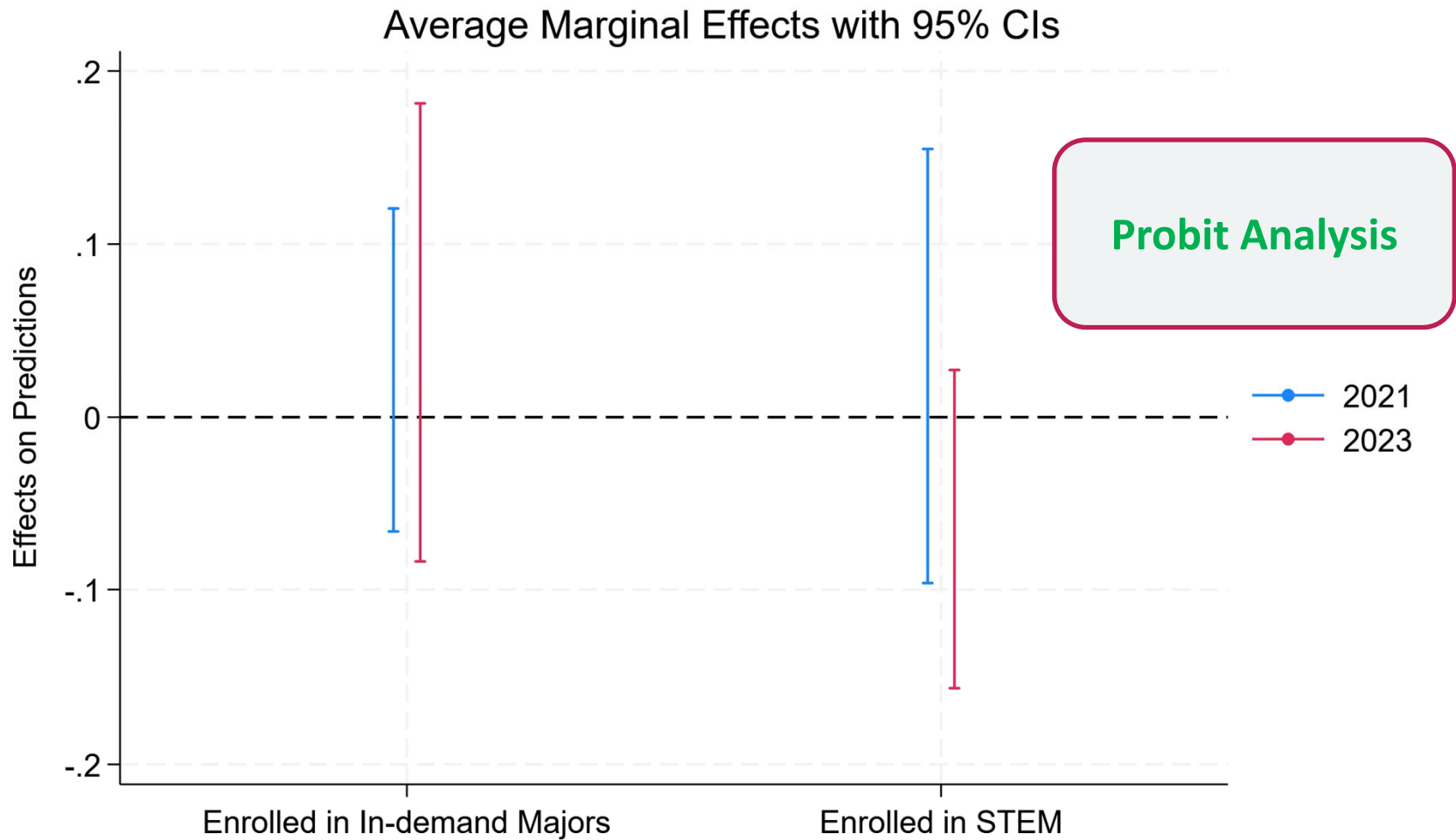
Enrollment Caps

Dataset: Using latest snapshot term (Spring 2025) to collect majors.



No evidence that either in-state students or out-of-state students starting after cap changes are majoring in "In-Demand" majors at a lower rate.

Enrollment Caps



Enrollment Caps

Research Questions

What are non-resident students majoring in at institutions with higher caps?
Are these majors aligned with state workforce needs?

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Enrollment Caps

Overview of Control Groups for Labor market Analysis

	Model 1	Model 2	Model 3	Model 4
Treated Group	NC A&T	NC A&T	NC A&T Engineering	NC A&T
Control Group	NCSU, UNCC, UNC-CH	All other NC colleges (except UNCOSA)	NC A&T Non-Engineering	All other NC colleges (except UNCOSA)
Method	DiD	DiD	Probit	Probit

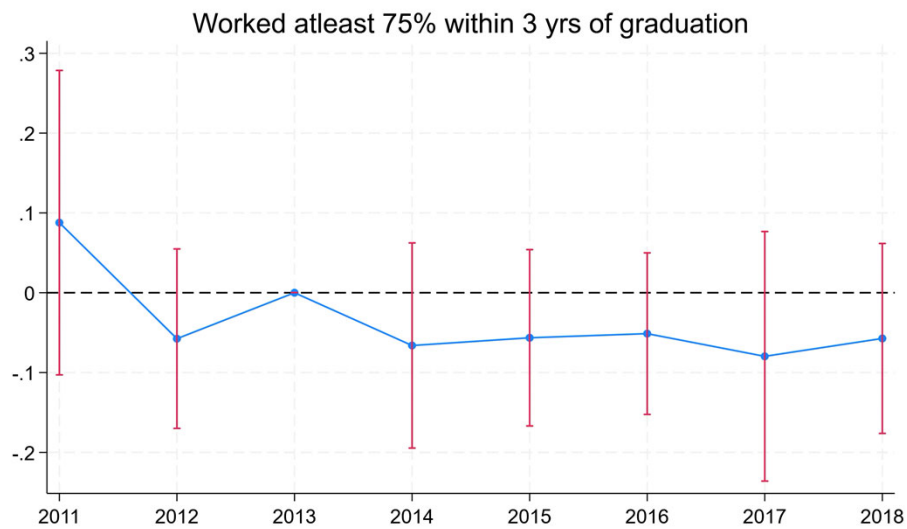
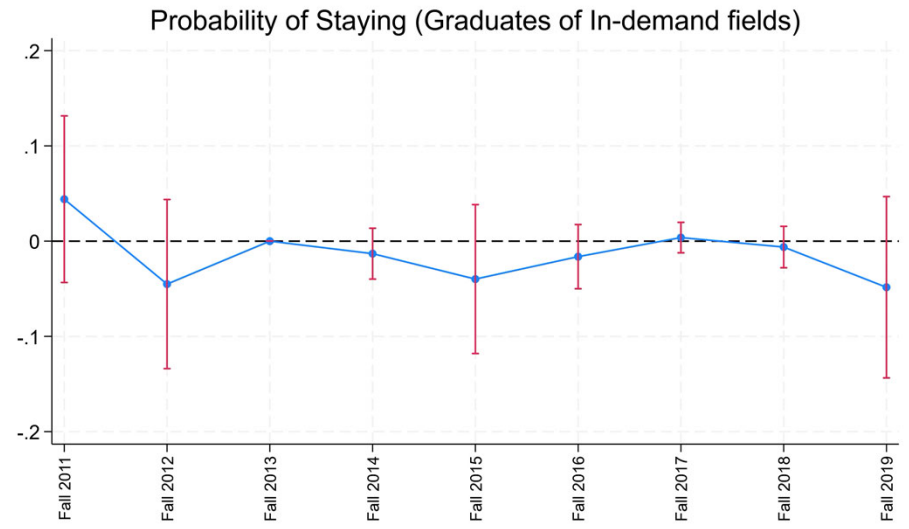
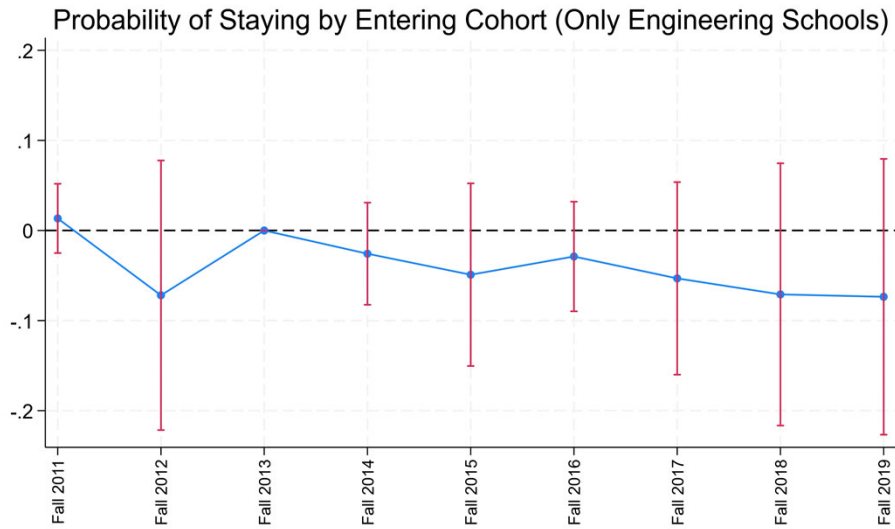
Enrollment Caps

We match graduate data with first-time applicant data (1st year, full-time degree seeking).

NC A&T students starting Fall 2014 and later are going to be our treated group.

Year Started	Graduates
Fall 2011	19,064
Fall 2012	21,147
Fall 2013	21,145
Fall 2014	21,865
Fall 2015	22,428
Fall 2016	23,203
Fall 2017	23,376
Fall 2018	23,724
Fall 2019	22,271

Enrollment Caps- NCA&T vs other Institutes

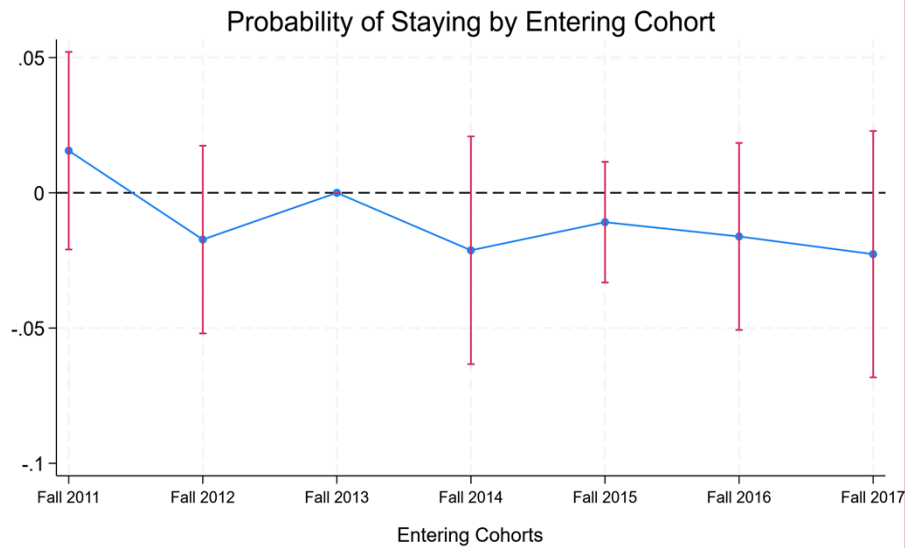


Results Inconclusive when restricting to:

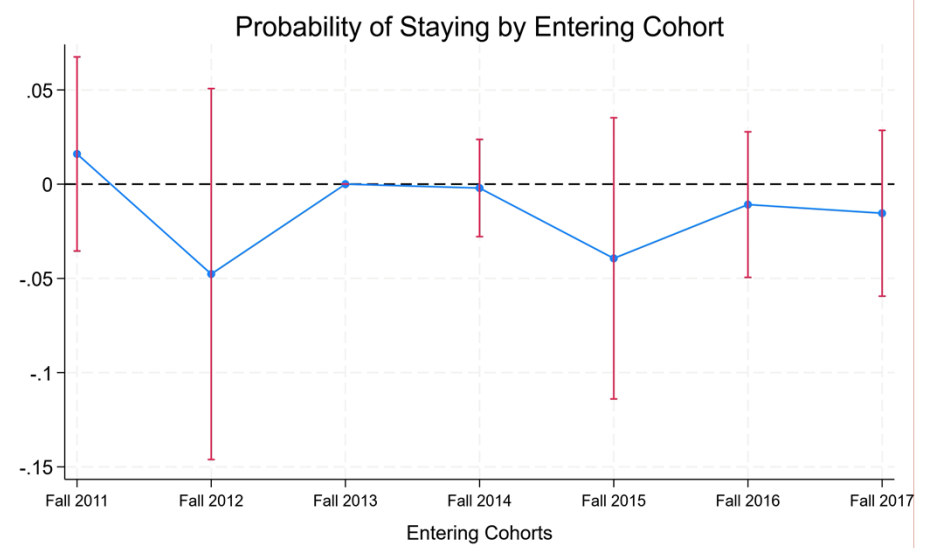
- 1) only engineering schools,**
- 2) only graduates with majors in In-demand fields**
- 3) longer term labor force attachment**

Enrollment Caps- NC A&T vs other Institutes

Instate Students

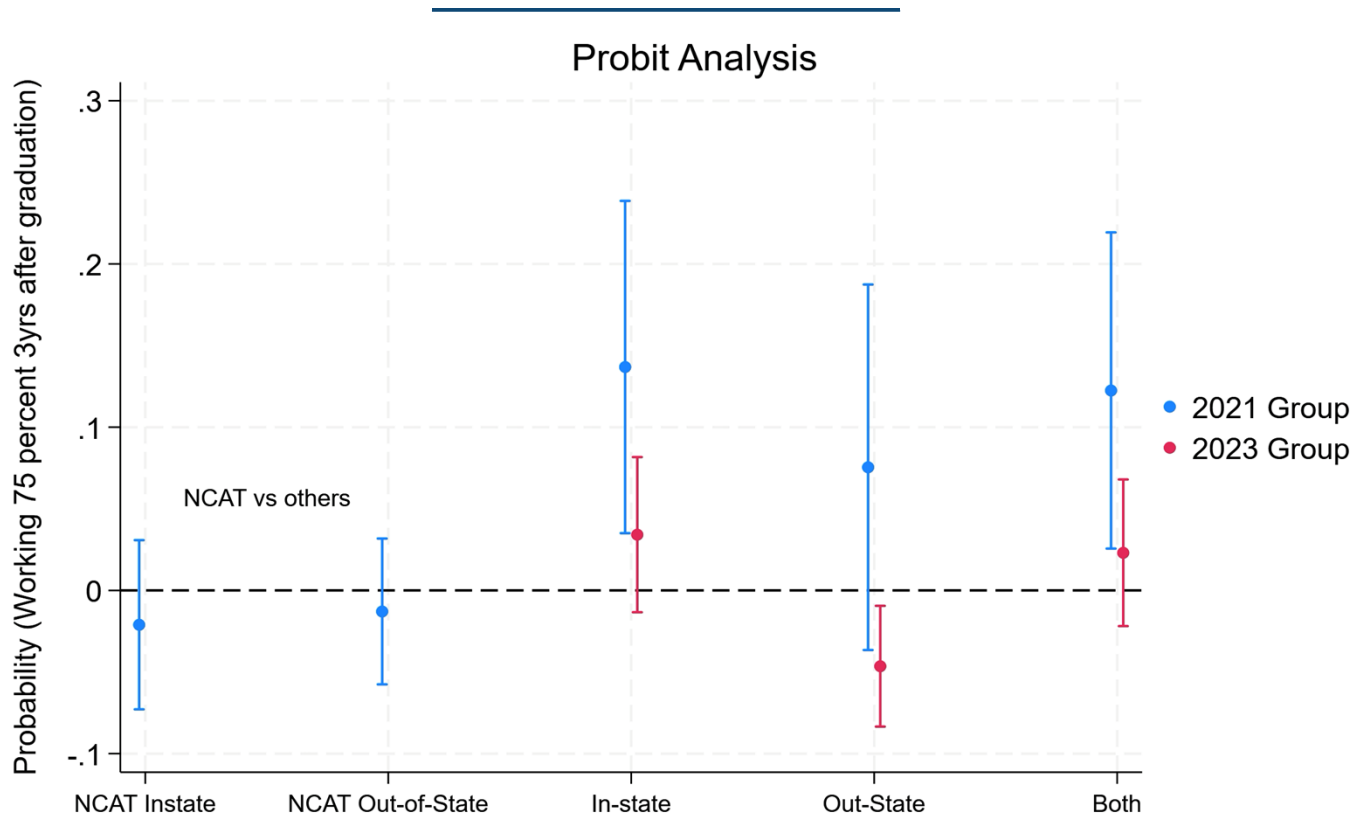


Out-of-State Students



While not statistically significant, there is some indication that both in-state and out-of-state students are likelier to move compared to graduates from our other 14 NC public institutes

Enrollment Caps- Probit Analysis



2021 cap change graduates appear to be staying in-state at a higher rate.

2023 Out-of-state students 5% less likely to be working at least 75% 3 yrs into graduation compared to non-cap institute graduates.

Enrollment Caps Summary

1. No major changes in admissions characteristics of incoming freshman classes post cap changes.
2. No evidence suggesting that in-students were being displaced in terms of major choice or college outcomes.
3. No conclusive evidence that cap changes increased the amount of aid institutes awarded.
4. Graduates from 2021 group (except NC A&T) slightly more likely to stay in NC after graduation.
5. Given the cap change policies did not significantly alter the type of in-state and out-of-state students that eventually enroll, a simple increase in caps most likely would simply add more students into NC's labor force.



QUESTIONS/ COMMENTS

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