Examining the Effects of Tuition Reset Policies on Enrollment and Institutional Finances at Minority Serving Institutions

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Abstract

This chapter addresses the unique financial situation of Minority Serving Institutions (MSIs) and empirically analyzes how changes in pricing strategies may impact student demand, enrollment, and institutional finances. The authors provide an overview of the history of MSIs and the complex set of policies dictating these institutions' MSI designation(s) and sources of public funding. The authors then provide an overview of postsecondary pricing strategies and why MSI designation may be related to the success of differing approaches. Using a difference-in-differences estimation strategy, the authors find no evidence that demand, as measured by the number of applicants, increases following a tuition reset. However, private MSIs appear to grow Pell and overall enrollments and increase total tuition revenue by resetting tuition. Public MSIs do not appear to receive the same benefits. Across all institutions, larger resets appear to yield enrollment growth, especially among Pell recipients, which may reflect higher levels of sticker shock among lower-income students. These findings suggest the tuition reset strategy may only be effective in certain contexts and appear to be more successful at achieving enrollment goals than revenue goals.

Keywords: Minority-Serving Institutions, tuition reset, postsecondary access, postsecondary finance

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The advertised cost of providing a postsecondary education has increased faster than public support for higher education (Webber, 2017). These changes have shifted the burden of paying for college from the federal government and state to students and families, through the reduced purchasing power of Pell Grants and direct appropriations comprising smaller shares of institutional revenues. This financial repositioning has disproportionately impacted historically underserved groups, such as racially minoritized students, economically disadvantaged students, and first-generation college students. Further, public divestment in higher education has resulted in steadily increasing tuition at public colleges and universities and ballooning student debt. Again, this shift in the burden of paying for college has reduced access for some students by creating an unaffordable price tag and, thus, has dissuaded a non-negligible share of students from enrolling at certain institutions due to their perceptions of the price. Put another way, some students experience "sticker shock" when they see high published tuition and fees, regardless of what the net price may be for a student after they receive financial aid, which prevents them from applying and enrolling (Levine et al., 2023). As Levine (2023) notes, "perceived costs are one of the most important factors influencing where students apply" (p.366). This phenomenon is particularly salient among Black, Hispanic, and lower-income students (Grodsky & Jones, 2007; Nienhusser & Oshio, 2017).

Minority Serving Institutions (MSIs) have historically played a unique role in the postsecondary sector and continue to serve a broad mission of expanding access and opportunity for racially minoritized individuals. While each MSI differs in its origin, they collectively seek to educate large concentrations of underrepresented students, often through their relatively

affordable price tag. However, MSIs are not immune to the broader context of austerity and have also had to respond by increasing their sticker price to varying degrees, by institutional sector. For instance, the in-state sticker price increased for both public and private MSIs between 2017 and 2021 between 17% and 18%, respectively (authors' calculations using data from "The MSI Data Project," Nguyen et al., 2023). When sticker shock impacts enrollments, it hampers MSIs' ability to fulfill their missions in two ways. First, it reduces the pool of students who apply and enroll at MSIs, thus, potentially reducing the number of students receiving benefits from an MSI education. Second, low enrollments reduce revenues and put a financial strain on institutions, limiting their ability to serve enrolled students effectively.

To counter this sticker shock, an increasing number of institutions have "reset" tuition, or cut sticker prices by at least 5% (Lapovsky, 2015, 2019). This is a relatively recent tuition-setting approach. Its corresponding research has documented its purported effects primarily in the private, not-for-profit sector (Corral & Ward, 2024; Ward & Corral, 2023). However, there needs to be more evidence concerning the effectiveness of this practice, especially across MSIs which vary in their financial strength and resilience (Ortagus et al., 2024; Williams & Davis, 2019). Additionally, the limited research on tuition resets suggests that their effectiveness is significantly impacted by institutional context and that there is heterogeneity in effects across reset sizes (Corral & Ward, 2024). As such, examining the effectiveness of tuition resets for increasing enrollments and improving institutional financial stability at MSIs is important given their unique mission and position within the postsecondary sector. Given the inequities within the postsecondary system, we expect our findings to provide MSI leaders with useful starting evidence to help them serve their target populations more effectively and reduce systemic inequities.

The chapter aims to fulfill three goals. First, we provide a brief historical overview and policy context of MSIs. This background serves as the basis to further understand their financial conditions, including relevant sources of funding and a discussion of historical inequities. The second goal is to provide a background and a review of research on tuition reset approaches. That section will inform our final aim and the empirical and descriptive portion of our chapter: examining institutional enrollment and financial outcomes of MSIs that have reset tuition. We conclude with a discussion of our findings, limitations, and recommendations for institutional leaders and other stakeholders.

Historical Overview of MSIs

MSIs are postsecondary institutions that enroll and educate significant shares of students of color and economically disadvantaged students. However, these institutions differ in their origins and contemporary missions. Various reauthorizations of the Higher Education Act of 1965 (HEA) created the various MSI monikers as they continue to expand and grow (Castro Samayoa, 2022). There are 11 active and different MSI classifications according to the Department of Education (ED) as we illustrate in Table 1. Each of these classifications refers to ED funding programs for which institutions may be eligible, thus, allowing a college or university to achieve the MSI distinction (Dortch, 2023; Hegji, 2017). MSIs generally fall into two distinct categories: 1) institutions created with the explicit mission of serving certain student populations, and 2) colleges and universities that meet a specific enrollment threshold for students from particular racial groups, along with meeting other student-related enrollment and financial requirements (see Table 1; Nguyen et al., 2023). To exemplify the former, higher education leaders recognized Historically Black Colleges and Universities (HBCUs) and Tribal Colleges and Universities (TCUs), also known as Tribally-Controlled Colleges and Universities,

in direct response to the historical and systemic racial discrimination experienced by Black and Indigenous people (Gasman et al., 2015). The proceeding paragraphs provide a brief historical overview of these distinct types of institutions.

HBCUs

The federal government formally recognizes HBCUs as postsecondary institutions established before 1964 with the intention of providing access to higher education for African Americans and Black people. The majority of HBCUs were founded after the Civil War and during the Reconstruction era, with Cheyney University serving as the first HBCU. This period in history saw a significant push towards educating freed slaves, with the support of religious missionary organizations, philanthropic foundations, and the Freedmen's Bureau (Gasman, 2008). While funding from various sources was crucial in their development, relying on these entities proved to be unsustainable (Gasman et al., 2008). The turn of the 20th century also saw increased philanthropic support for these institutions from well-known industrialists of the time (e.g., Rockefeller and Carnegie). Moreover, the Second Morrill Act of 1890 required states to establish land-grant colleges (Agricultural and Mechanical Institutions) for Black students if their existing land-grant colleges were segregated, which led to the establishment of several public HBCUs. The Second Morrill Act also provided significant federal funding for public HBCUs. Throughout the 20th century, HBCUs expanded their academic offerings and played a critical role in providing higher education to Black students, especially in the Jim Crow South where segregation laws prevented them from attending Predominantly White Institutions (PWIs). As of 2023, there were 101 HBCUs located in 19 states (Rutgers Center for Minority Serving Institutions, n.d.). There are 51 public HBCUS and 50 private HBCUs.

Stakeholders often laud HBCUs for their outsized contribution in enrolling and educating Black and other racially minoritized students. And for good reason; they are thought of as institutions doing more with less (Edwards et al., 2023; Gasman et al., 2017). As described more later, HBCUs face decades of financial inequities while still producing proportionally greater outcomes in several domains. For example, despite comprising 3% of all postsecondary institutions, about 40% of Black students apply to at least one HBCU and HBCUs enroll 10% of all Black college students (Edwards et al., 2023). Furthermore, HBCUs collectively have a disproportionate impact on the production of Black STEM degrees and serve as an important pathway to our country's professional class. To illustrate, in 2018, HBCUs produced nearly 14% of all Black bachelor's degrees (National Center for Science and Engineering Statistics, 2021). Finally, there is growing positive economic evidence for Black students attending HBCUs. Using a robust administrative dataset that linked college applications, college enrollment, and financial outcomes, Edward and colleagues (2023) found that Black students who enrolled in an HBCU experienced a household income around age 30 that is 5% higher compared to otherwise similar Black students who do not enroll in an HBCU but applied.[1] Thus, HBCUs offer a considerable contribution in terms of access and success. Nevertheless, as we describe later, HBCUs' financial stability continues to be a contentious issue despite being eligible for and receiving mandatory federal funding; HBCUs continue to receive inequitable funding relative to their PWI counterparts along with private HBCUs continuing to rely heavily on student tuition dollars.

TCUs

TCUs are institutions the federal government recognized beginning in 1965 that are critical to the development and sustainability of Indigenous communities. Tribal governments

[1] The analytic sample includes applicants that did not enroll in any college who comprise roughly 10 percent of the study group.

officially charter TCUs and these institutions serve many purposes (American Indian Higher Education Consortium, 2022). The broad aims of TCUs are to 1) preserve and promote Indigenous culture, language, and traditions; 2) provide career and technical education; and 3) offer access to postsecondary education that many rural communities would not otherwise have. Diné College (formerly Navajo Community College) was the first Tribal college officially created in 1968. Both the Civil Rights Movement and the Self-Determination Movement starting in the 1960s helped ignite the recognition and eventual growth of these institutions as ways to counteract the historical and vile discrimination, including forced assimilation, Indigenous folks experienced (Marroquín, 2019). The Self-Determination Movement promoted a focus among Indigenous people in developing and self-governing their own educational institutions (Gasman et al., 2008). Accordingly, the 1970s and 1980s experienced an increase in the number of TCUs, primarily two-year institutions (Johnson et al., 2006, cited in Gasman et al., 2008). As of 2022, there are 35 fully accredited TCUs located across 15 states (American Indian Higher Education Consortium, 2022).

Enrollment-Based MSIs

The second category of MSIs we referenced earlier refers to enrollment-based MSIs. The federal government recognizes this cadre of institutions as colleges and universities that enroll a specific share of racially minoritized students, along with meeting other criteria, often related to student enrollment targets and finance. This group broadly consists of Alaska Native and Native Hawaiian Serving Institutions (ANNHSI), Native American-Serving Nontribal Institutions (NASNTI), Predominantly Black Institutions (PBIs), Hispanic Serving Institutions (HSIs), and Asian American and Native American Pacific Islander-Serving Institutions (AANAPSIs), each with their own unique enrollment threshold and histories. For instance, PBIs differ from HBCUs

as they tend to be institutions created post-1964 and Black students must represent at least 40% of their student body, along with enrolling at least 1,000 undergraduates. In addition to these specific enrollment specifications, there is also a requirement that relates to institutions enrolling a certain fraction of students needing financial assistance. HSIs, for example, must have 25% of their undergraduate enrollment comprised of Hispanic students, *and* 50% of students must show financial need. Table 1 includes a list summarizing MSI types and their notable criteria. Note that institutions can meet the requirements of several MSIs, although they can only hold one federal MSI grant at a time (Yang & Masuilt, 2017). According to the Center for Minority Serving Institutions at Rutgers University (2023), there were 848 MSI-eligible institutions.

It is important to note that while these postsecondary institutions enroll and educate high concentrations of racially minoritized students and historically underrepresented students, it does not necessarily suggest they effectively serve students. On the one hand, the growing number of enrollment-based MSIs may reflect the demographic realities of a growing and diverse America. This may be the case with the appreciable increase in the number of HSIs. One study documents that the number of HSIs has increased by nearly 200% since 1995, from 189 to 559 in 2021 (Marin & Aguilar-Smith, 2023). On the other hand, there is also a growing strand of literature challenging the assumption of an institution's "servingness." Questioning an institution's servingness refers to the notion that simply because an institution matches federal criteria for funding, then it may not represent the institution's intrinsic motivation and/or ability to serve specific student populations or promote equitable academic outcomes (Garcia, 2017; Nguyen et al., 2023). Some scholars posit that institutions may purposefully target specific demographic enrollments to attain an MSI status and the accompanying funding or meet the criteria by happenstance rather than with purposeful intentionality. On the contrary, institutions may not be

in the appropriate position to support students despite gaining MSI status. As a result, while the MSI category offers researchers a useful heuristic to think about and analyze institutions educating great shares of marginalized students, researchers must also be aware that an institution's intention may not reflect an institution's commitment and capacity to serve racially minoritized students.

Financing MSIs

Public and private not-for-profit colleges and universities receive funding from a variety of sources. Two primary sources of income include 1) federal and state appropriations and 2) tuition and fees (Smith, 2019). This section discusses these primary sources of income at MSIs.

MSI Federal Funding Programs

The MSI designation is a result of institutions meeting the eligibility criteria for, applying, and ultimately securing, institution-specific funding programs. Therefore, the distinction confers significant financial benefits. These financial resources are a way to address historic inequities by race and ethnicity through building institutional capacity with support from the federal government. Currently, the federal government provides financial resources to MSIs through the HEA's 11 grants program under Title V (see Table 1).

The application process for an eligible MSI is intricate and requires thorough documentation to prove that the institution meets the necessary criteria the federal government requires for funding. The application process involves submitting extensive data on student demographics, financial aid, and the proposed academic program(s). However, potential issues can arise in this process. First, the bureaucratic nature of the application process can be daunting, particularly for smaller institutions that may need more resources to manage complex paperwork and data submission. Aguilar-Smith (2021) interviewed institutional administrators working at

HSIs to understand their experiences in applying for Title V funding. She interviewed both unsuccessful and successful applicants. Successful Title V grantees, for instance, were able to hire outside grant writers who had previous experience in securing ED grants. Some participants noted they also had difficulty navigating the request for proposals (RFPs) as the federal government creates these documents filled with technical jargon that many administrators were not familiar with. What is more, Aguilar-Smith (2021) noted that successful HSIs had institutional research offices that were agile enough to respond to ED's unpredictable and short-windowed RFPs. For context, in FY2020, the Title V Developing HSI Program opened on December 27, 2019, and closed on February 23, 2020, allowing less than two months for institutions to apply. These issues highlight the need for a more streamlined and transparent application process and ongoing support for institutions to fulfill their role as MSIs effectively.

While the 11 grant programs formally designate an institution as an MSI, they are not the only form of funding they receive from the government. A large share of federal funding for MSIs is given indirectly through student aid programs (e.g., Pell Grant program and Work Study program; Williams & Davis, 2019). Nevertheless, the latest government report on these programs suggests that in FY2023, the MSI funding programs awarded approximately $1.293 billion (Dortch, 2023) We now briefly describe each federal funding program

The federal government authorizes most of the funds to MSIs via their "Strengthening Institutions Program" (SIP) which is denoted as Title III-A and Title III-F of the HEA. SIP serves as the foundation for outlining some criteria for MSIs to be eligible for a particular program. According to Dortch (2023), to qualify for Title III-A and Title III-F programs, institutions must meet three criteria:

- Have relatively low educational and general expenditures,

- 50% of undergraduate students received need-based financial assistance, and
- Is an accredited and authorized two- or four-year college or university located in the U.S. or its associated jurisdictions.

Institutions may request a waiver if they fail to meet one or several of these requirements. An eligible institution is thus eligible to receive institution-specific SIP funding (described below). For instance, all enrollment-based institutions plus TCUs receive funds through Title III-A and Title III-F. HSIs receive capacity-building grants instead through Title V while also receiving STEM-specific funds from Title III-F. HBCUs, on the other hand, receive funds through other sections of Title III.

As mentioned previously, building institutional capacity is the chief motive for these federal funds. Some funding programs offer general capacity-building grants, while others focus on supporting specific disciplines and programs, like STEM and increasing access to graduate education. For example, an eligible HSI, may be entitled to apply to one of three different types of federal funding opportunities: 1) the Developing Hispanic-Serving Institutions Program, 2) Hispanic-Serving Institutions - Science, Technology, Engineering, or Mathematics and Articulation Programs, or 3) Promoting Postbaccalaureate Opportunities for Hispanic Americans Program. In an effort to understand the types of programs funded through these specific programs, Boland (2018) conducted a content analysis of enrollment-based MSIs that applied for Title III and V grants. He found that the abstracts of the funded program proposals generally focused on initiatives such as tutoring and advising centers, remedial courses, technology and data improvements, and faculty and staff professional development. These programs were generally described as efforts to improve course completion, student retention, transfer, and/or graduation.

While some of these MSI Funding Programs are guaranteed through legislation, others are non-compulsory. According to Hegji (2017), the MSI "programs are typically funded through annual discretionary appropriations, but additional annual mandatory appropriation" (Summary section). In fact, over 80% of funds appropriated to MSIs are discretionary funding. The distinction between discretionary and mandatory appropriations in MSI funding is crucial because it impacts the stability, predictability, and planning capabilities of these institutions. Discretionary funds, subject to annual budget negotiations, can fluctuate, affecting the ability of MSIs to plan long-term initiatives. Mandatory funds, on the other hand, provide a more ostensibly predictable stream of funding, allowing for more secure and sustained programming, staffing, and resources to support their educational missions and the communities they serve. Despite efforts by the Trump administration to curtail funding for MSIs, both mandatory and discretionary funds tend to be stable year over year (Castro Samayoa, 2022).

Additional TCU Federal Funding

TCUs receive federal funding from other sources than the Strengthening Institutions Program. The federal government also provides funds for TCUs through the Tribally Controlled College or University Assistance Act (TCCUAA) of 1978 which the U.S. Bureau of Indian Affairs administers. Through the TCCUAA, the federal government authorizes a set amount of money per Indigenous student at TCUS, with the latest figures suggesting each institution receives $8,000 per student (Nelson & Frye, 2016; Postsecondary National Policy Institute [PNPI], 2022). However, TCUs rarely receive the authorized amount from the federal government, leading some to claim that TCUs remain perpetually underfunded (Nelson & Frye, 2016). While these per-student subsidies serve as the base budget for TCUs, it is important to note that TCUs do not receive federal funds for non-Indigenous students, who make up an

appreciable share of the TCU student body–roughly one in five students (21%) in 2022 (PNPI, 2022).

State Funding

State appropriations represent a meaningful share of revenue at public colleges, but that share has decreased over time (Li, 2017). Typically states provide funding for colleges and universities to pay for university operations, but they also provide appropriations for research and financial aid grants. However, state support for universities has declined over time, particularly around 2008. The decline in state higher education also comes at a time when costs for Medicaid and K-12 schools are increasing (Smith, 2019). These competing priorities for limited resources may crowd out higher education funding. As previous research has shown, higher education is often the first area to reduce funding during periods of austerity and the last area to have funding restored (Delaney & Doyle, 2011; Gándara et al., 2023). Moreover, political partisanship may exacerbate cuts to higher education and do so in a way that disproportionately impacts institutions serving larger shares of historically underserved students (Taylor et al., 2020, 2023). While public colleges rely quite a bit on states for funding, private colleges receive a smaller share from states.

Performance-Based Funding

The framework states use to appropriate money to public colleges has changed in recent decades, with potentially severe consequences for MSIs. It has long been the norm that public colleges and universities receive state funding based on a combination of the number of enrolled students and the prior year's appropriation (Layzell, 2007; Ortagus et al., 2021). However, over the past three decades, most states have adopted or redesigned performance-based funding (PBF, also known as outcomes-based funding) models that base appropriations on measurable outputs.

Examples of measurable outcomes include the number of degrees awarded, retention rates, and job placement rates. While states sanction outcomes-based funding under the rubric of efficiency and accountability, the literature supporting this approach is thin. This is particularly the case when outputs are difficult to measure, tasks are complex, and/or organizations do not have the organizational or human capacity to support efforts (Hillman & Corral, 2018).

Thus, it may come as no surprise that research examining whether and to what extent MSIs might be disadvantaged by such pay-for-play regimes has produced concerning results (Gándara & Assalone, 2018; Hillman & Corral, 2018; Ortagus et al., 2023). For instance, Hillman and Corral (2018) explore to what extent the adoption of PBF models was associated with changes in state appropriations for MSIs in PBF states compared to MSIs in non-PBF states. They found that such policies were associated with about a $763 per full-time or equivalent (FTE) student decline in funding. Furthermore, Ortagus and colleagues (2021) explored whether the design and dosage of PBF affected state funding for HBCUs and four-year universities that serve high concentrations of racially minoritized students. They found that states with high-dosage PBF policies (states that apportion greater than 10% of their funding via outcomes metrics) had large and negative effects on these institutions. HBCUs received 23.5% less state money which translates to about $2,215 less per FTE student. Institutions that serve above-average shares of students of color experienced a loss of about $905 per FTE student. However, states that incorporate “equity premiums” - financial bonuses to institutions that promote access and success for underserved students - into their PBF models might counteract the potential negative consequences of paying for performance (Gándara & Rutherford, 2018). In sum, the state higher education landscape appears to be steadily headed toward a future that puts money

on the table for student and institutional outcomes regardless of whether an institution has the capacity to act upon them.

Inequitable State Funding at HBCUs and TCUs

HBCUs. Although there has been ongoing support at the federal level to support HBCUs financially, there are significant inequities at the state level for public HBCUs. These inequities date back to the Second Morrill Act of 1890 as states were required to have equal levels of funds between land-grant colleges founded through the First Morrill Act of 1862 (ED, 2023). These inequities have also been highlighted in the Supreme Court case of *United States v. Fordice* (1992), which had effects on the way states must dismantle de jure segregated higher education systems, including increasing funding for HBCUs.

However, inequitable funding is still present at HBCUs. For instance, in September 2023, U.S. Secretary of Education Miguel Cardona and U.S. Secretary of Agriculture Thomas Vilsack highlighted existing inequities. They sent letters to 16 governors highlighting that there is an aggregate funding disparity between public land-grant HBCUs and their non-HBCU land-grant counterparts totaling over $12 billion. Calculating these disparities between 1987 and 2020 using IPEDS data, the Secretaries present a disparity range from $172 million to $2.1 billion. They recommend states appropriate additional funds to these institutions, while also suggesting rectifying the situation through private donor gifts, which may or may not be feasible at certain institutions.

TCUs. Tribal Colleges also operate in a distinct state funding environment relative to other MSIs. Both two- and four-year TCUs have quite distinct revenue streams relative to their non-TCU counterparts. According to Nelson and Frye (2016), roughly 70% of TCUs' revenue came from federal sources. The next biggest revenue streams are local appropriations and net

tuition and fees. The smallest share of funding TCUs receive is less than 3% from the state. This low number is due to how the federal government recognizes Indigenous colleges as tribally chartered institutions, as opposed to state postsecondary institutions (Nelson & Frye, 2016). As a result, "states have no obligation to fund the operations of TCUs and in most cases do not - not even for their non-Native state residents that attend TCUs" (Nelson & Frye, 2016, p. 3-4). This is worrisome given that TCUs do enroll an appreciable number of non-indigenous students annually but are not provided the corresponding funds to help educate them.

Tuition and Fees

Tuition and fees typically comprise a meaningful share of revenue for postsecondary institutions which vary by public and private status. For context, Figure 1 shows the average sticker price from 2004 through 2021 for public and private MSIs and non-MSIs as well as the average estimated net price over this period. The gap in both sticker price and net price between public and private institutions has grown over time. Moreover, the gap between MSIs and non-MSIs has grown, more so among private institutions. The lower sticker and net prices of MSIs likely reflects organizational missions and the populations served by these institutions. As described above, some MSI designations explicitly include serving lower-income students, and all MSIs serve groups of students who have been historically excluded from higher education. The lower prices reflect a purposeful expansion of access to these groups.

Both public and private colleges and universities have different financial structures and student demographics, which can influence their tuition strategies and dependency. Public institutions receive an appreciable share of state funding, which can alleviate some reliance on tuition. However, as noted previously, this support has been declining over the years, increasing the tuition burden on students and families (Delaney & Doyle, 2011; Gándara et al., 2023).

Private institutions, on the other hand, rely more heavily on tuition and fees due to receiving a smaller share of state funding. Private institutions often have larger endowments and resources to support financial aid programs and scholarships, but endowment sizes vary significantly between MSIs and non-MSIs.

Figure 2 represents mean tuition reliance (tuition and fees as a fraction of core revenues) between 2017 and 2021, separated by private and public status and MSI and non-MSI status. Privates rely more on tuition than publics. We also see private MSIs relying more on tuition than their private non-MSI counterparts. Tuition revenue, on the other hand, is around 30% for public non-MSIs, while the share of tuition revenue is lower for public MSIs. Dependence on tuition and fees as a major revenue source comes with risks, especially during an economic downturn or demographic shifts that lead to declining enrollment. Institutions must navigate these challenges by developing robust financial strategies, such as diversifying revenue streams, enhancing recruitment and retention efforts, and advocating for increased governmental and philanthropic support, to ensure financial stability and fulfill their educational mission. One potential avenue is the adoption of a tuition reset.

Tuition Reset Background and Evidence

A tuition reset is a strategy for setting tuition among postsecondary institutions. While there is no formal definition, the literature has coalesced around defining the notion as a reduction in sticker price by at least 5% (Lapovsky, 2015, 2019). Recent research has also focused on this approach within the private, not-for-profit sector (Corral & Ward, 2024; Ward & Corral, 2023). For instance, tuition resets have been common in recent years as 63 private baccalaureate-granting colleges have instituted one between 2012 and 2018 (Ward & Corral, 2023). Before discussing the current state of research on tuition resets, we compare this

contemporary tuition-setting strategy with the well-established approach of tuition discounting (Hillman, 2012).

Relation to Tuition Discounting

Institutions typically award financial aid to students after accepting them. These financial aid awards include federal student aid (e.g., Pell Grants, Direct Student Loans, and Federal Work Study), institutional aid (e.g., need-based grants and merit-based scholarships), and students' expected contributions through earned income during the academic year and summer. Researchers often refer to institutional aid as tuition discounting (Hillman, 2012). More than 90% of first-year students at private colleges and universities receive a discount averaging a 56% reduction in sticker price (NACUBO, 2023). Institutions may draw from endowment funds or use other philanthropic donations to cover these grants and scholarships. Colleges and universities essentially forgo tuition revenue from students when they discount tuition. Although nearly all students at private nonprofit institutions receive a discount, the individual awards vary. Colleges use these discounts to meet certain organizational goals such as increasing opportunities to lower-income students via need-based grants or prestige striving via merit-based awards that help an institution improve metrics used for rankings or advertising (Grodsky & Kalogrides, 2008; Lucido, 2014; Weisbrod et al., 2008). As a result, there is a trade-off between increased efficiency in the pricing process and a social inefficiency of charging each student what they can afford to pay. This can have equity implications if institutions are unable to effectively lower the price for lower-income students to an affordable level.

Background on Tuition Resets

A tuition reset, on the other hand, shifts this discounting practice, at least partially, from a backend to a frontend process. Rather than reducing tuition via institutional awards after an

institution has accepted a student, a reset reduces the published sticker price before they open an application. Tuition resetting is thus a clear shift from the "high-tuition, high-aid" model of postsecondary pricing as a way to improve perceived affordability from the perspective of the student (Turner, 2018). As such, a tuition reset has the potential added benefit of streamlining the financial aid process by reducing the amount of individual awards that need to be calculated and balanced. Of course, the efficiency benefits of this streamlining depend on the size of the reset and how much of the discounting process institutions shift to the front end.

Theoretical Perspectives on How Students Perceive College Pricing

How might students perceive tuition resets? Cheslock and Riggs (2020) provide a framework that offers two relevant perspectives to understand the psychological aspects that inform student and family decision-making in the context of higher education pricing. As they note, "prices can potentially also convey information about the quality of the institution and the value placed upon the student by the institution" (Cheslock & Riggs, 2020, p. 759). The first relevant perspective is the price-quality heuristic. This notion suggests that given the wide variation in characteristics among colleges and universities, students might derive inferences about institutional quality based on ancillary factors, such as listed price. As a result, students who have the least amount of information about higher education might be likely to rely on price as a proxy for quality. In this instance, prices decreasing might lead to decreased demand leading potential matriculants, thus considering higher education as a "Veblen Good." The second relevant perspective in Cheslock and Riggs' (2020) framework is the silver lining principle. This idea relates to the way students may interpret a "transaction that includes gains and losses," similar to an institutional aid award (Cheslock & Riggs, 2020, p. 763). The interpretation of gains and losses center on how a student integrates them and evaluates the result. Cheslock and

Riggs (2020) provide the example of a student confronted with a sticker price the student receives. For instance, if a student receives financial aid, they might either see it as reducing the overall cost of attending the institution or as a separate gain. This principle suggests that students might view colleges differently depending on how they perceive the relationship between tuition costs and financial aid.

In light of the insights put forth by Cheslock and Riggs (2020), it becomes evident that students' perceptions of a tuition reset in higher education are inherently complex. To summarize, students may interpret a tuition reset through two primary lenses. First, employing the price-quality heuristic, students might see a reduction in tuition as signaling a decline in institutional quality, particularly if they correlate higher tuition with better education. Conversely, drawing from the silver lining principle, students may evaluate a tuition reset in terms of gains and losses. On the one hand, for some students, a tuition reset could be seen as a welcome relief, reducing the overall financial burden. On the other hand, it might be perceived as a loss, especially if they equate higher tuition with prestige. Thus, the way students perceive a tuition reset depends on their individual perspectives, which are shaped by their background and postsecondary preparation.

Empirical Research on Tuition Resets

What effects do resets have on institutional finances? Previous research on these approaches has focused on the private sector, which frame and promote sticker price reductions in a particular way, often lauding an increase in institutional affordability (Corral & Ward, 2024). The research on private not-for-profit institutions implementing a tuition reset study the policies using institution-level data and a difference-in-differences design (Corral & Ward, 2024; Ward & Corral, 2023). One study confirms that when institutions reset tuition they shift the

discounting process from the backend to the frontend and reduce institutional aid expenditures (Ward & Corral, 2023). This shift is roughly offsetting as per-student net-tuition revenue remains steady following a discount. Importantly, this shift has the potential to hamstring institutions' ability to engage in price discrimination (Levine, 2022). There is mixed evidence on the efficacy of a reset in increasing enrollment among private universities. On average, resets do not appear to increase overall enrollment, but institutional context and the size of the reset appear to create wide variation in the effectiveness, particularly when resets are as steep as 20% or 30% (Corral & Ward, 2024). This variation transfers to the overall revenue effects of resets and their ability to improve an institution's financial outlook. An important unknown factor is how resets impact applications and yield. Even if there are no strong enrollment effects, these pricing approaches may have spillover benefits that help colleges improve stability through increased student demand as measured by increased applicants or yield rates.

There is other emerging research focusing on price reductions as well, primarily in the community college and public four-year sector (Acton, 2021; Denning, 2017; Klasik et al., 2024). For example, Denning (2017) studied how some community college districts in Texas shifted their tuition structure, which are supported by local property taxes, thus creating boundaries that provide in-district versus out-of-district tuition. Using a difference-in-differences approach, Denning found a $1,000 decrease in tuition was associated with a 5.1 percentage point increase in immediate enrollment. Acton (2021), studying similar changes in tuition boundaries in the community college context, found a lower estimate of about 3.5 percentage points when tuition decreased by $1,000. Acton (2021) further found students' persistence and likelihood of transferring to a four-year college also increased. This finding suggests potential effects beyond enrollment and on improving student success. Finally, Klasik et al. (2024) provides novel

evidence on sticker price reductions in the public four-year sector by studying North Carolina Promise, a state-level policy that slashed tuition for all students attending one of the three colleges in the University of North Carolina System. Using a synthetic control design, Klasik and colleagues (2024) found no significant increase among first year students, but did find an increase in transfer students and among Hispanic students at one institution. Thus, the research on cuts in sticker price across the board for students even before considering applying offers mixed evidence.

Why might students considering MSIs behave differently in response to tuition resets? MSIs have historically served students who need more financial resources. Research shows that lower-income students are more price-sensitive and experience higher levels of sticker shock (Grodsky & Jones, 2007; Nienhusser & Ohshio, 2017). However, MSIs are already an attractive option for students of color as they are often located in areas already serving racially diverse demographics and earn a federal distinction of serving great shares of students of color. Furthermore, MSIs may use tuition resets strategically, not only to enhance their competitive positioning in the higher education market but also to align with their institutional missions of serving underrepresented students and fostering diversity. The historical and cultural ethos of these institutions plays a crucial role in how prospective students and families perceive tuition resets and can influence the regional and community-specific strategies employed to meet enrollment and diversity objectives. Based on the enrollment and financial histories of MSIs, previous research on tuition resets, and the underlying theory driving perceptions of institutional pricing, we anticipate student enrollment at these institutions should increase following a reset.

Research Design

Data, Sample, and Measures

We rely on data collected from the Institutional Postsecondary Educational Data System (IPEDS) to estimate the relationship between a tuition reset and institutional outcomes. IPEDS gathers information from all U.S. postsecondary institutions that participate in federal financial aid programs. The data include information on institutional enrollment and finance. We compiled a panel dataset from 2003 through 2021 of 2,966 public and private institutions. In addition to IPEDS data, we leverage MSI classification data compiled by Nguyen et al. (2023). As described above, HBCU and TCU status remain constant overtime due to their statutory designation. Other MSIs can toggle in and out of their designations depending on enrollment demographics and satisfying financial requirements. We classify an institution as an MSI, generally, if it holds this designation in 2021. We also include an indicator in our data whether an MSI is a statutorily identified one (i.e., TCU or HBCU) or one achieved through a formula (see Table 1 for an overview of these designations). This indicator reflects the heterogeneity across MSIs and allows us to account for different institutional motivations.

An institution's total revenue is a function of enrollment, sticker price, and institutional aid or discounts. In this study we seek to assess the relationship of a tuition reset with each of these elements in order to present a complete understanding of the benefits or drawbacks of a reset. Table 2 describes our key outcomes of interest, which include the average number of undergraduate enrollment applications, fall undergraduate full-time equivalent (FTE) enrollment, Pell enrollment, tuition allowances per FTE, tuition revenue per FTE, and total tuition revenue. Pell enrollment is only available from 2010 forward, and our models reflect this shorter sample period. We use a log transformation of outcome variables in our models. Table 2 also includes state revenue per FTE, a control which is likely related to enrollment and our finance variables, as well as the percentage of adults with a bachelor's degree or higher in an institution's state and

the state unemployment rate, which serve as time varying covariates that may influence the demand for higher education. In order to better understand potential differences across treatment and control institutions and types of MSI, we also examine three-year rolling averages of changes in enrollment and the amount of institutional aid given to students.

Table 2 provides means separately for institutions that enacted a reset and those that did not. It also presents means across the following subgroups: non-MSIs, MSIs, public MSIs, private, formula-driven MSIs, and statutorily-designated MSIs. There are substantial differences in institutional characteristics between reset and non-reset institutions generally and across the subgroups. These differences likely reflect the underlying causes of a reset and the fact that many institutions are motivated to reset tuition in an effort to increase student demand and improve financial outlooks. As seen in Table 2, although reset and non-reset institutions are similarly sized, those engaging in resets receive fewer applications suggesting lower student demand. The notable exceptions are at private MSIs and HBCUs and TCUs.

To identify treatment institutions, we calculate year-over-year percent changes in reported tuition. Institutions with a decrease of more than 5% were identified as having a tuition reset, aligned with definitions used in previous research (Corral & Ward, 2024; Lapovsky, 2015, 2019; Ward & Corral, 2023). We remove institutions that reset tuition multiple times during the study period as these institutions are likely to be unique cases that should be analyzed separately. This results in a final sample of 574 treated institutions. We consider an institution to have a reset until the tuition level returns to the pre-reduction amount. Figure 3 shows the distribution of reset lengths. More than half of resets last 3 years or less, although some institutions maintain a lower tuition level for an extended period of time.

There is also significant variation in the timing and size of resets across institutions. Other than a spike among MSIs in 2008, the distribution of resets is relatively constant across sample years, as shown in Figure 4. This distribution of timing factors into our estimation strategy, as described below. Figure 5 shows the variation in reset size is similar among MSIs and non-MSIs. Roughly 55% of resets are more than a 15% reduction in tuition. We explore the relationship between dosage and outcomes in our analysis.

Analytic Technique

To estimate the relationship between tuition resets and our outcomes of interest, we use a difference-in-differences (DiD) approach. Recent advances in econometrics methods suggest staggered treatment adoption and the ability of units to move between treated and control groups may bias traditional two-way fixed-effects estimates (Baker et al., 2022; Goodman-Bacon, 2021; Wing et al., 2024). To address issues related to staggered adoption of resets and the ability of the treatment to switch on and off, we use the approach developed by de Chaisemartin and D'Haultfoeuille (dCDH; 2020, 2023). This approach enables us to estimate the instantaneous average treatment effect on the treated (ATT) at the time a reset occurs as well as the dynamic ATTs over specified periods. Given the immediacy of the expected relationship between a reset and our outcomes of interest, the instantaneous ATT is helpful for understanding organizational shifts occurring alongside a tuition reset and the longer-term dynamic ATT allows us to understand the sustainability of the strategy. Because institutions that reset tuition likely accompany these actions with press releases and marketing efforts (Corral & Ward, 2024; Lapovsky, 2019), these institutions may benefit to some degree from press materials remaining on the internet or lingering in students', parents' or school counselors' minds after tuition levels have returned to normal rates.

In estimating the DiD model using dCDH's approach, we identify all non-treated institutions during the sample period and created a set of matched control institutions based on a logit model using the variables from Table 2 to estimate propensity scores of the likelihood of enacting a reset. We restricted the sample of control institutions to account for the aforementioned institutional motivations for lowering sticker prices. Figure 6 presents kernel density plots of propensity scores for analytic sample which closely track across subsample of institutions.

We analyze the relationship between resets and institutional outcomes among all public and private nonprofit institutions as a reference point and then examine the relationship exclusively among MSIs and several sub-samples. We examine how the relationship varies between public and private MSIs given the differences in sticker price and discounting strategies across the sectors. We also examine how the relationship differs between MSIs that are formula driven and those defined by statutes. Because formula-driven MSIs may have incentives to shift enrollment patterns, including among Pell recipients, resets may be a strategic device to earn or maintain their MSI status.

As a robustness check to our findings, we also specify event study models using approaches developed by Sun and Abraham (2021) and Borusyak et al. (2021), which are included in the appendix. We also examine how outcomes vary at schools enacting larger resets given that previous research suggests reset dosage impacts enrollments across different student populations (Corral & Ward, 2024). Given students are imperfect consumers and may be more likely to respond to the absolute size of the reset than percentage discounts, we use a $5,000 threshold to examine the effects of larger resets. To maintain our comparison group of never-

treated institutions, we eliminate institutions with resets smaller than $5,000 from the sample when estimating dosage effects.

Limitations

Among private institutions, tuition resets are designed and implemented by institutions themselves. As such, the "treatment" is endogenous and institutional leaders consider the financial impact of such a decision. Often, an institution will have net tuition revenue targets and will package aid accordingly. At private institutions, the packages are often negotiated by prospective students and financial aid administrators balance tuition dollars secured as students sign enrollment contracts with their pool of available financial aid dollars for unsigned students or students accepted off a waitlist. Our estimates of the relationship between a reset and financial outcomes does not constitute a causal relationship. Instead, we use the DiD approach to understand the relationship between resets and financial aid expenditures and tuition revenue to inform a broader understanding of organizational strategy.

At public institutions, tuition resets may be exogenously decided by system leadership, a state governing board, or the legislature, however, this is not always the case. We do not have comprehensive data on whether these are externally mandated so we are hesitant to make any causal claims regarding financial outcomes measured in this study.

Enrollments represent student demand; however, institutions have the ability to constrain this demand through the admissions process. As discussed above, the sticker price of an institution impacts the likelihood of applying, especially for certain groups of institutions, but merely applying does not ensure admission or enrollment. Since many institutions enacting a reset are intending to increase enrollments (Corral & Ward, 2024; Lapovsky, 2019) and the reset is exogenous to potential applicants, there is a greater likelihood that enrollment effects may be

causal. However, we caution a causal interpretation because of the limitations of enrollment as a measure of student demand and the likelihood that an institution enacting a reset may also be implementing other marketing strategies simultaneously. We do estimate the effect on the number of applicants, which is likely a better estimate of demand. However, we cannot disaggregate applications by students' income to assess differential effects on demand from lower-income students.

Findings

We present our findings through several event study graphs. Figure 7 shows the estimated dynamic effects for enrollment-related outcomes across the full set of institutions and the MSI-only sub-sample. Panel A shows the estimated effect of a reset (of at least 5%) on the number of applications. We find little effects of a reset on the number of applicants, although there may be a negative impact in the longer term. This downward trend appears more pronounced at MSIs than among the full sample of institutions. Importantly, these findings suggest a reset does not induce higher levels of student demand, as measured by the number of applications. Panels B and C show the relationship between a reset and fall enrollment and Pell enrollment, respectively. Among the full sample of institutions, point estimates are small but positive over time, although standard errors remain large. No relationships with either enrollment outcome are shown among MSIs.

Figure 8 provides dynamic estimates of the relationship between tuition resets and institutions' financial outcomes. Panel A shows changes in per-FTE institutional aid (i.e., discount) expenditures. On average, a reset is associated with a 20% reduction in institutional aid expenditures. Given the average size of a reset is 19.1%, this suggests a near one-to-one trade off by shifting tuition discounts from the financial aid process on the backend of the admissions

cycle to a reduced sticker price on the frontend of the application process. In both the full sample and among MSIs, this effect fades somewhat over time, likely accompanying the rise in tuition back towards its pre-reset price. Panels B and C of Figure 8 show the net tuition revenue on a per-student basis and in absolute terms, respectively. Among both the full sample of institutions and the sub-sample of MSIs, resets do not appear to be associated with substantial shifts in tuition revenue patterns. These findings call into question the effectiveness of a reset to create demand which could result in increased tuition revenue.

Although institutions may be mission driven, they must operate within fiscal constraints. As institutions have become increasingly reliant on tuition revenue, the effect of any policy on tuition revenue is critical for institutional viability. Total revenue is a function of enrollment, sticker price, and institutional aid and thus a culmination of the treatment and other reported outcomes. As shown in Panel C of Figure 7, after an initial decrease in total tuition revenue, most institutions appear to recover and may have positive tuition revenue with the exception of public MSIs.

Subgroup Variation

Figure 9 shows application and enrollment effects of four subgroups of MSIs: public institutions, private institutions, statutory MSIs (i.e., HBCUs and TCUs), and formula-driven MSIs. As shown in Panel A, we find that resets are associated with decreases in the number of applicants across all subgroups, however standard errors remain large which is likely due to the smaller sample sizes. Point estimates are most negative among private and statutory MSIs, approaching nearly 50% decrease in the number of applicants during prolonged resets.

Despite the apparent negative associations between resets and applications, enrollments following a reset differ across sub-groups. At public MSIs, overall and Pell enrollments trend

downward, but these enrollment patterns are reverse at private MSIs. While standard errors remain large across both groups and both outcomes, we do see the point estimates to be more extreme among Pell enrollment in both groups reaching 20 percent decreases and increases, respectively, for longer resets. There is some evidence that Pell enrollments increase in the long-run at statutory MSIs, however, enrollment estimates pre-treatment trends across the statutory and formula-driven subgroups do not follow similar trends relative to the comparison group.

Figure 10 shows stark differences in changes in institutional aid across public and private MSIs. Public institutions do not appear to substantially adjust aid expenditures while private MSIs reduced aid expenditures by more than 50 percent, an association that persists over time. These differences are important given that public and private MSIs have similar average discount rates (18% and 21%, respectively). Differences in institutional aid responses may reflect the origins of reset policies. Private institutions autonomously determine their tuition price and thus a reset is part of a larger conversation about financial and enrollment strategies. Public institutions may implement a reset in a similar way, but can also have one externally imposed on them from the system or state level. If a reset is externally determined, a public institution may not have planned to adjust institutional aid expenditures. Alternatively, public institutions may face restrictions on changing institutional aid expenditures or have mission-oriented earmarked spending on institutional aid to provide access to in-state students which would contribute to the null findings among public MSIs.

At private MSIs, the decreases in aid translate to relatively stable per-FTE tuition revenue. We observe an upward trend in total revenue, which tracks with the upward trends in total enrollment at private MSIs. The relatively steady levels of institutional aid at public MSIs coupled with a reset appears to yield decreases in per-FTE and total tuition revenue. The small

point estimates for per-FTE revenue likely reflects the observed decreases in enrollment at public MSIs following a reset.

We observe decreases in discounting at both statutory and formula-driven MSIs, although point estimates for statutory MSIs dip substantially lower. These larger decreases in aid at statutory MSIs may translate to increased tuition revenue, but these effects do not persist over the full six-year post-reset time period. At formula-driven MSIs, the smaller decreases in aid lead to apparent decreases in revenue; point estimates suggest a 10% decrease, but standard errors continue to be large.

Dosage Effects

We examine our six outcomes following larger resets of $5,000 or more to examine variation driven by dosage effects. Due to the smaller sample of institutions engaging in larger resets, we only estimate these relationships for the full sample and all MSIs pooled. As seen in Figure 11, larger resets do not appear related to student demand, as measured by the number of applicants. However, enrollments in both samples appear to increase following a large reset, especially among lower-income Pell recipients.

Institutions also decrease their discounting practices following a large reset. These decreases are substantial and persistent at about 60% among all institutions and ranging over time from roughly 75% to 40% at MSIs. Although these decreases in aid are large, they may not fully offset the lost revenue associated with the reset. In both the full sample and among MSIs per-FTE tuition revenue appears to decrease between 10% and 20%. However, total tuition revenue in both samples remains flat following a reset. This is particularly striking given the downward trend in total tuition revenue prior to the reset, suggesting this strategy may help stabilize institutional revenues.

Discussion

Our findings suggest that, on average, MSIs experience similar enrollment and financial outcomes as non-MSIs, although resets may be positively associated with Pell enrollments at non-MSIs to a greater extent. The negative relationship between a reset and the number of applicants may indicate that higher education is a Veblen Good, where higher prices induce more demand, or a "Chivas Regal" effect. Such a phenomenon has been documented at wealthy, low-acceptance institutions (Kirp, 2003), but the dominant discourse about postsecondary education more broadly centers on unaffordability and how students are price sensitive (Dynarski et al., 2022; Goldrick-Rab, 2016). Importantly, we cannot disaggregate applicants by income using IPEDS data. It is possible that reductions in applications are driven by higher-income students and that the extent to which college is a Veblen Good is directly proportional to a student's financial wellbeing.

When we disaggregate MSIs into different subgroups, we continue to see decreases in applicants following a reset, however we find important enrollment differences. We find a sharp split in Pell enrollment between public and private MSIs with the former experiencing decreases and the latter experiencing increases. Although enrollment is neither exclusively an indicator of student demand, due to an admissions process, nor exclusively tied to sticker price, due to financial aid and backend discounting, the growth in Pell enrollments supports previous research findings that lower-income students may be most responsive to changes in actual and perceived prices (Corral & Ward, 2024). Our findings suggest that a tuition reset may help private MSIs fulfill income-related aspects of their missions. Moreover, the growth in Pell in both the full sample and among MSIs that enacted a reset of more than $5,000 reinforces the importance of perceived prices for lower-income students.

Our observed decrease in total enrollment and among Pell students at public MSIs may point to a lack of efficacy of tuition resets among these institutions. Public MSIs, which have lower average tuition than their private and non-MSI counterparts, may have a sticker price that is sufficiently low to deter sticker shock even if students are net-price sensitive. The growth in Pell enrollments at private MSIs is likely driven by the combination of higher sticker prices, as shown in Table 2, and the fact that lower-income students are more susceptible to sticker shock (Grodsky & Jones, 2007; Levine et al, 2023). These findings at private institutions are also supported by previous research examining private colleges in general (Corral & Ward, 2024).

We also find differences in enrollment trends across statutory and formula-driven MSIs. While both groups' overall enrollment remained relatively stable, statutory MSIs appear to experience a growth in Pell enrollments while formula-driven MSIs' Pell enrollments remain flat. While both groups of MSIs generally have it in their missions to serve lower-income students, formula-driven MSIs have an added incentive to enroll these students because many designation formulae include lower-income student enrollment. As such, we expected to see formula-driven MSIs to use resets to pursue this group. We may observe null effects because the threshold is easily met by these institutions considering roughly one-third of their students already receive Pell (see Table 2) or because some MSI designations only require a certain percentage to receive need-based aid which is a more expansive group than Pell recipients.

Implications for Institutional Finance

The overwhelming majority of institutions lack an abundance of alumni with deep pockets or a sizable endowment from which to draw funds. Instead, institutions are operating on tight budgets where every enrolled student and their net tuition revenue is critical for meeting organizational revenue goals (Hossler & Bontrager, 2014). Simultaneously, the shifting burden

of postsecondary costs to students and their families coupled with rising costs of colleges have created more price sensitive students and put college out of the financial reach of many students. In the face of declining enrollments and increased opacity in college pricing, many institutions have turned to tuition resets as a marketing tool and a way to communicate to students that their institution is affordable.

Total tuition revenue, an important component of institutional revenue especially among private MSIs, is a function of total enrollment, sticker price, and institutional aid. As sticker price decreases, as in the case of a tuition reset, it is expected that institutional aid will also decrease in order to keep net tuition revenue per FTE constant. Of course, if an institution can increase its enrollment with a low marginal cost for each additional student, it is possible that a decrease in sticker price does not necessitate an equivalent decrease in institutional aid to grow total tuition revenue.

Our findings in Figure 8 suggest that, on average, a tuition reset does not substantially improve an institution's total tuition revenue or tuition revenue per FTE. This is due to large decreases in institutional aid and relatively null enrollment effects. However, these outcomes differ between public and private MSIs. We observe private MSIs experiencing some growth in fall enrollment and total tuition revenue. These effects appear to be strongest when resets are prolonged, suggesting a reset is not a quick fix to the revenue equation. Nevertheless, private MSIs that reset tuition appear to benefit financially in the long-term.

Public MSIs, however, show a downward trajectory in total tuition revenue. These institutions experience decreases in enrollment, especially in the longer-term, and do not appear to change institutional aid expenditures substantially. The steady per FTE discounts may be due to public institutions' lack of discretion in some public dollars earmarked for institutional aid.

Additionally, tuition revenue comprises a smaller share of total revenue thus making the passthrough of decreases in sticker price to decreases in institutional aid less important for the organization's bottom line. However, public institutions do experience decreased total tuition revenue, which grows in magnitude over time.

Tuition resets, especially larger and more prolonged resets, represent a shift away from a high tuition/high aid model towards a low tuition/low aid model. Both public and private institutions have moved towards the high tuition/high aid model over the past several years, although the shift has been more pronounced among private institutions. As such, we expect a reset to be more impactful in this sector. Private institutions using this model generally charge each student a different net price after various types of aid are included to discount the sticker price. The high tuition/high aid models allows enrollment managers at private institution to strategically use aid to advance institutional goals which may include significant need-based aid to improve affordability for lower-income students, targeted grants that reduce the price and increase enrollment of historically underserved populations, or specialty awards to bolster academic, athletic, or other extracurricular accomplishments at the institution. Resetting tuition and moving towards a low tuition/low aid model likely places constraints on an institution's ability to use aid to recruit certain groups of students.

Some scholars have pointed out that restricting tuition prices may harm lower-income students as institutional aid budgets will not grow sufficiently to make college affordable for those with higher demonstrated financial need (Levine, 2022). Moreover, they argue that cutting sticker prices may harm lower-income students. Our findings suggest that private MSIs, which have higher sticker prices, increase Pell enrollments following a reset and larger cuts to the sticker price generally are followed by increases in Pell enrollments. Moreover, larger resets are

associated with decreases in per-FTE tuition revenue which suggests a substantial change in pricing model may translate to lower net prices for students. Previous research has also indicated that while all students at private institutions experience a decrease in net price following a reset, the decrease is smallest for the highest income students and the net price for lower-income students remains lower than middle- and upper-income students (Corral & Ward, 2024). Although IPEDS data does not allow for a student-by-student examination of net price, we are encouraged by our findings that Pell enrollments grow and believe that resets may be a useful tool for lowering sticker shock and bringing more transparency to the college pricing process for this group.

Finally, tuition resets do not appear to bring increased financial stability to institutions. Although a reset may have positive effects on students, especially lower-income students, the null or negative relationships between resets and tuition revenue suggests there are no financial revenue gains for institutions using this approach. There may be improved administrative efficiencies that result in lower costs for the institution, and we encourage future research to examine this. While the benefits to students are an important outcome, if these institutions are engaging in resets as a strategy to combat poor financial outlooks, then resets do not appear to be a feasible solution for their problems.

Conclusion

In many ways MSIs are fundamentally different than their non-MSIs. These institutions have distinct missions, experience different trends in and shocks to demand, receive mission-aligned federal funding, but have also been historically neglected through other funding mechanisms. As a result of this unique position, many MSIs are facing financial constraints that may jeopardize their ability to fulfill their mission or remain solvent. Both MSIs and non-MSIs

have engaged in tuition reset policies in an effort to counter flagging enrollment, induce demand for the institution, and improve the organization's financial outlook. In this study, we build upon prior research to understand how students and institutions respond to decreases in sticker prices at MSIs.

Our findings suggest tuition resets may not induce demand, on average, as intended. Enrollment changes are likely driven by organizational strategy, and we find a divergence between public and private MSIs. These strategies do not appear to be linked to improved financial outcomes for institutions. Taken together, our findings suggest that private MSIs may use resets to grow enrollment and possibly increase overall tuition revenue. They appear to do this while also increasing access to lower-income students, although our findings cannot disaggregate if the reset hampers the institution's ability to meet these students' financial needs. Resets may be a viable option for some institutions, but context and individual strategy likely plays a pivotal role in the success of such a strategy.

Our findings, and those from previous scholarship, suggest additional avenues for future research. We believe it is important to better understand the factors related to and preceding the adoption of a reset policy. These antecedents of the policy may provide useful ways to further disaggregate estimates of the effects of resets and give important context that influences the success of such a strategy. Additionally, it is important to further explore the effects among public institutions and identify if enrollment and finance outcomes differ when institutions devise the reset strategy themselves as opposed to it being externally mandated. Finally, we suggest future research explore students' responses and perceptions of a reset to better understand when and if resets can be an effective tool for institutions.

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Table 1
Description of MSI Types and Criteria

Mission-Based MSI	**Primary Student Enrollment Criteria**	**Legislation & HEA Federal Program Names**	**Purpose of Funding Program & Other Criteria**	**# of Eligible Institutions in 2023**[a]
Historically Black College and University (HBCU)	None	Title III, Part B & F, Strengthening Historically Black Colleges and Universities Program	Assists HBCUs in "strengthening their academic, administrative, and fiscal capabilities"	101
	None	Title III, Part D, Historically Black College and University Capital Financing Program	Provides HBCUs with loans to improve infrastructure	101
Historically Black Colleges and Universities Graduate Institutions (HBGI)	None	Title III, Part B, Strengthening Historically Black Graduate Institutions Program	Authorizes grants to HBCUs with graduate programs to improve "academic, administrative, and fiscal capabilities"	24
Historically Black Colleges and Universities Masters Institutions (HBCU Masters)	None	Title VII, Part A, Master's Degree Programs at Historically Black Colleges and Universities	Support HBCUs in improving graduate STEM education	18
Tribal College and University (TCU)	None	Title III, Part A & F, Strengthening American Indian Tribally Controlled Colleges and Universities (TCCUs) program	Provides funds to enhance academic quality, institutional management, and financial stability	35
		Tribally Controlled College or University Assistance Act (TCCUAA) of 1978[b]	Provides the majority of institutional funding for TCUs based on the number of Indigenous FTE students ($8,000)	35

Enrollment-Based MSI	**Primary Student Enrollment Criteria**	**HEA Federal Program**		**# of Eligible Institutions in 2023[a]**
Hispanic Serving Institution (HSI)	25% Hispanic student undergraduate enrollment	Title V, Part A, Developing Hispanic-Serving Institutions Program	Provides general capacity-building grants to expand educational opportunities for Hispanic students	539
HSI - STEM	25% Hispanic student undergraduate enrollment	Title III, Part F, HSI STEM and Articulation Programs	Offers grants with two separate aims: 1) Increase the number of Hispanics in STEM via improving academic quality and capacity, and 2) Develop transfer pathways and articulation agreements between two-year and four-year institutions.	--
HSI - Promoting Postbaccalaureate Opportunities for Hispanic Americans Program (PPOHA)	25% of undergraduate enrollment identify as Hispanic	Title V, Part B, Promoting Postbaccalaureate Opportunities for Hispanic Americans Program	Provide grants to increase postbaccalaureate opportunities for Hispanics and expand postbaccalaureate academic offerings	--
Predominantly Black Institution	40% of undergraduate enrollment identify as Black	Title III, Part A & F, Strengthening Predominantly Black Institutions	Offers grants with specific purposes, such as enhancing institutional capacity, expanding educational opportunities, and financial stability	65
PBI - Masters Degree Programs[c]	40% of undergraduate enrollment identify as Black	Title VII, Part A, Master's Degree Programs at Predominantly Black Institutions	Provide grants to establish Masters degree programs at PBIs (with a focus on STEM)	5
Asian American and Native American Pacific	10% of undergraduate enrollment identify	Title III, Part A & F, Strengthening AANAPISIs program	Offer grants to improve AANAPISI's ability to serve Asian Americans and Native American	207

Islander-Serving Institutions (AANAPISI)	as Asian American and Pacific Islander		Pacific Islanders and low-income individuals	
Alaska Native and Native Hawaiian-Serving Institutions (ANNHIs)	20% of undergraduate enrollment identify as Alaska Native	Title III, Part A & F, Strengthening (ANNHIs) program	Provide grants to support Alaska Natives or Native Hawaiians.	16
Native American-Serving Nontribal Institutions	10% of undergraduate enrollment identify as Indigenous	Title III, Part A & F, Strengthening NASNTIs program	Offer grants to support	32

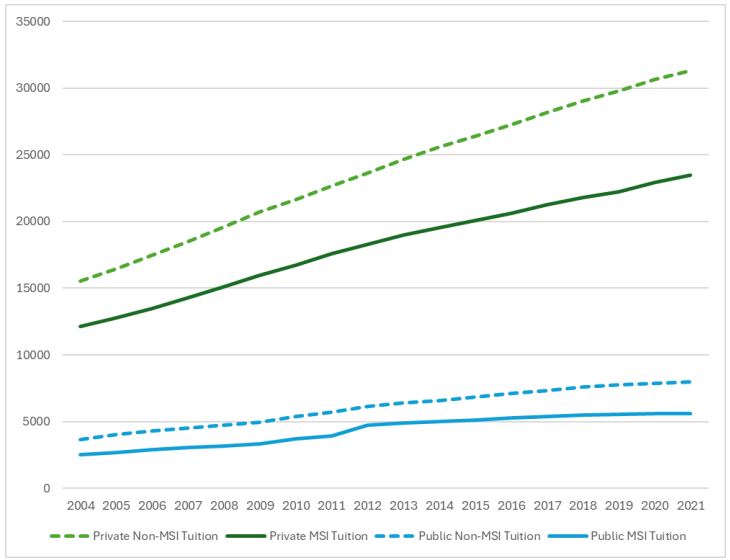
Note. Adapted from Hegji (2017), Dortch (2023); Nguyen et al. (2023); and Rutgers Center for MSIs (2023).
[a] Based on the Rutgers Center for MSIs (2023) eligibility list.
[b] The TCCUAA is not an MSI funding program from the HEA but does provide considerable base funding for TCUs. The U.S. Bureau of Indian Affairs administers it.
[c] The federal government last funded this program in 2014 and we therefore consider it inactive.

Table 2: Descriptive Statistics of analytic Sample, by MSI Status

	All Institutions		Non-MSIs		MSIs		Public MSIs		Private MSIs		Formula-Driven MSIs		Statutory MSIs	
	Reset	Non-Reset	Reset	Non-Reset	Reset	Non-Reset	Reset	Non-Reset	Reset	Non-Reset	Reset	Non-Reset	Reset	Non-Reset
Number of Applications	3,982	6,003	3,831	5,924	4,463	6,342	5,335	10,108	2,910	2,499	4,349	6,702	4,833	4,775
Fall FTE	6,171	5,988	5,598	5,732	7,716	7,068	10,292	11,199	2,199	2,729	9,313	8,311	3,294	2,764
Number of Pell Recipients	2,044	1,700	1,640	1,422	3,092	2,744	3,979	4,219	1,048	1,140	3,481	3,095	1,923	1,489
Total Tuition Revenue	42,800,000	64,000,000	47,300,000	68,700,000	31,100,000	44,400,000	35,500,000	58,000,000	21,600,000	30,000,000	36,200,000	52,100,000	16,900,000	17,800,000
Tuition Rev. per FTE	8,639	11,553	9,916	12,528	5,286	7,483	3,298	4,380	9,544	10,769	5,157	7,549	5,675	7,254
Avg. Inst. Aid Award	4,128	5,776	4,678	6,338	2,684	3,431	1,871	1,950	4,426	5,000	2,634	3,617	2,842	2,789
State Funding per FTE	2,998	3,501	2,268	3,246	4,915	4,566	7,046	7,665	350	1,284	4,528	4,163	5,994	5,956
Rolling Avg. Enrl. Change	0.97%	0.82%	1.10%	0.86%	0.60%	0.69%	0.89%	0.97%	-0.04%	0.40%	0.70%	0.84%	-0.01%	0.16%
Rolling Avg. Aid Award	4,009	5,538	4,565	6,083	2,586	3,286	1,787	1,870	4,359	4,802	2,512	3,455	2,802	2,701
State BA Attainment Rate	29.80%	30.34%	29.85%	30.52%	29.67%	29.53%	30.13%	29.52%	28.58%	29.53%	29.67%	30.30%	29.72%	27.03%
State Unemployment Rate	5.95%	6.02%	5.94%	6.01%	5.98%	6.08%	5.90%	6.02%	6.17%	6.14%	6.01%	6.12%	5.92%	5.93%

Figure 1: Average Sticker Price and Net Price, by MSI Status and Control

Panel A: Sticker Price



Panel B: Net Price

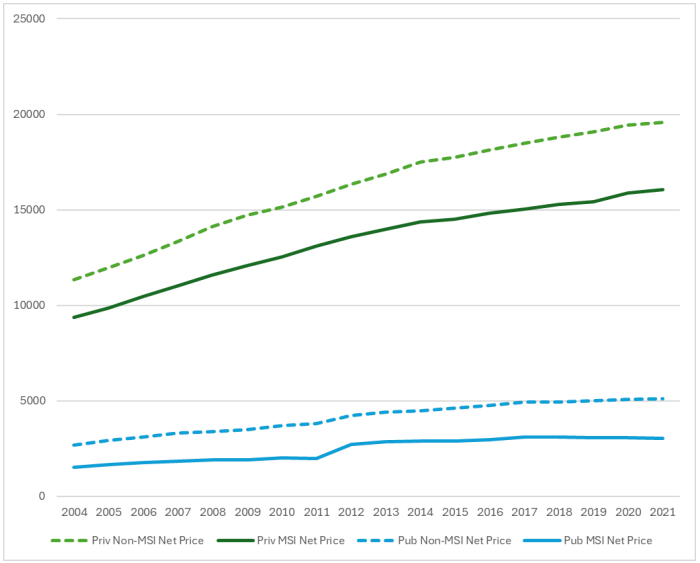
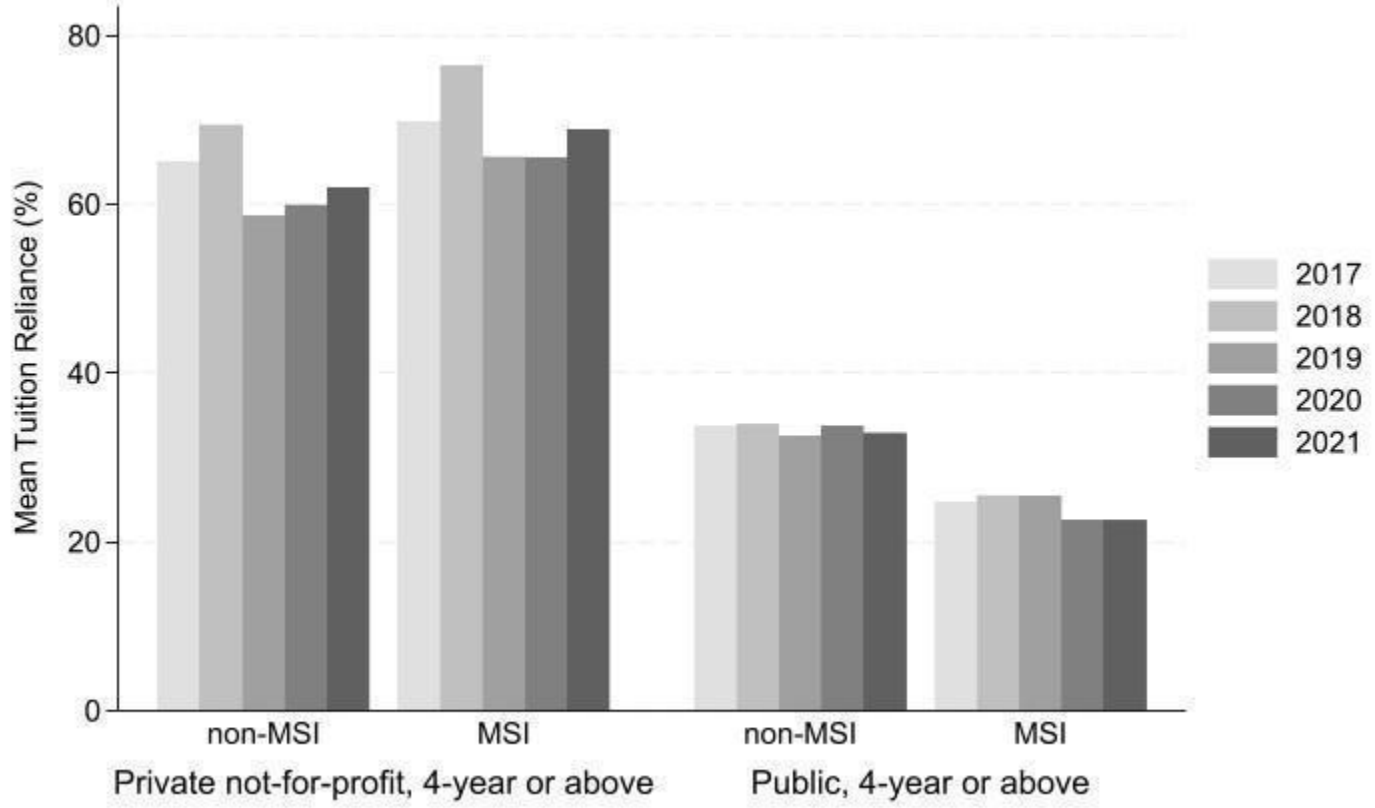


Figure 2.

Mean Share of Tuition Reliance by Sector and MSI-Status



Source: The MSI Data Project (Nguyen et al., 2023).

Figure 3: Length of Tuition Resets, by MSI status

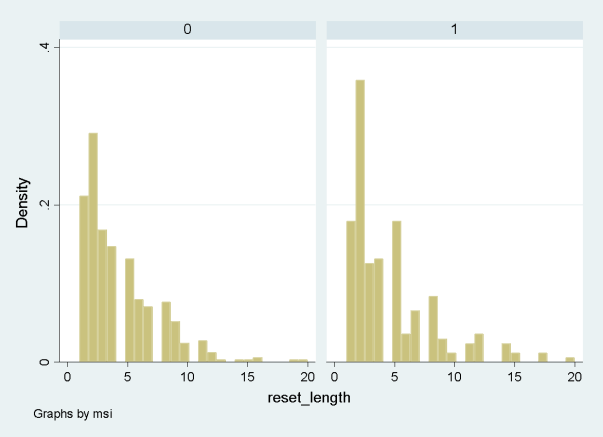


Figure 4: Distribution of Tuition Resets across Sample Years, by MSI Status

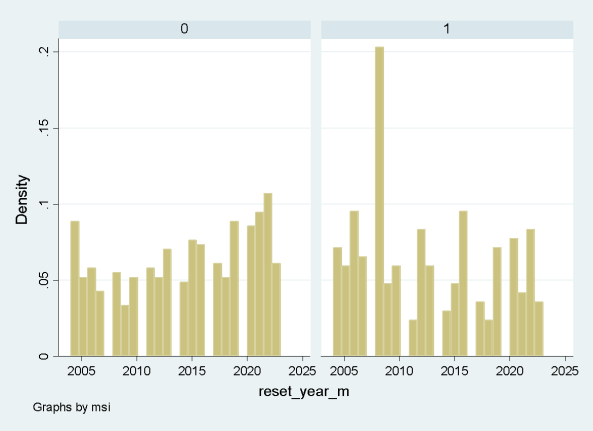


Figure 5: Distribution of Tuition Reset Sizes, by MSI Status

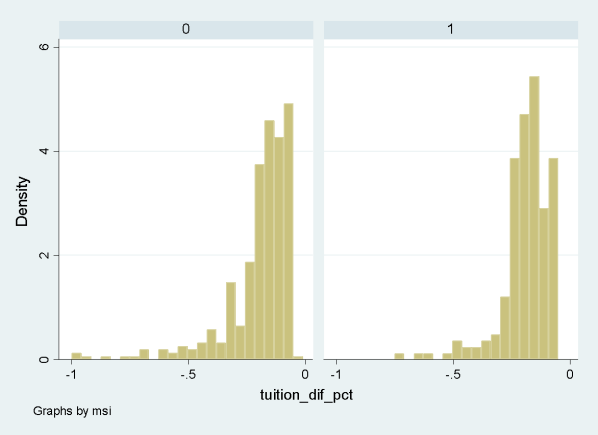


Figure 6: Kernel Density Plots of Matched Sample Propensity Scores

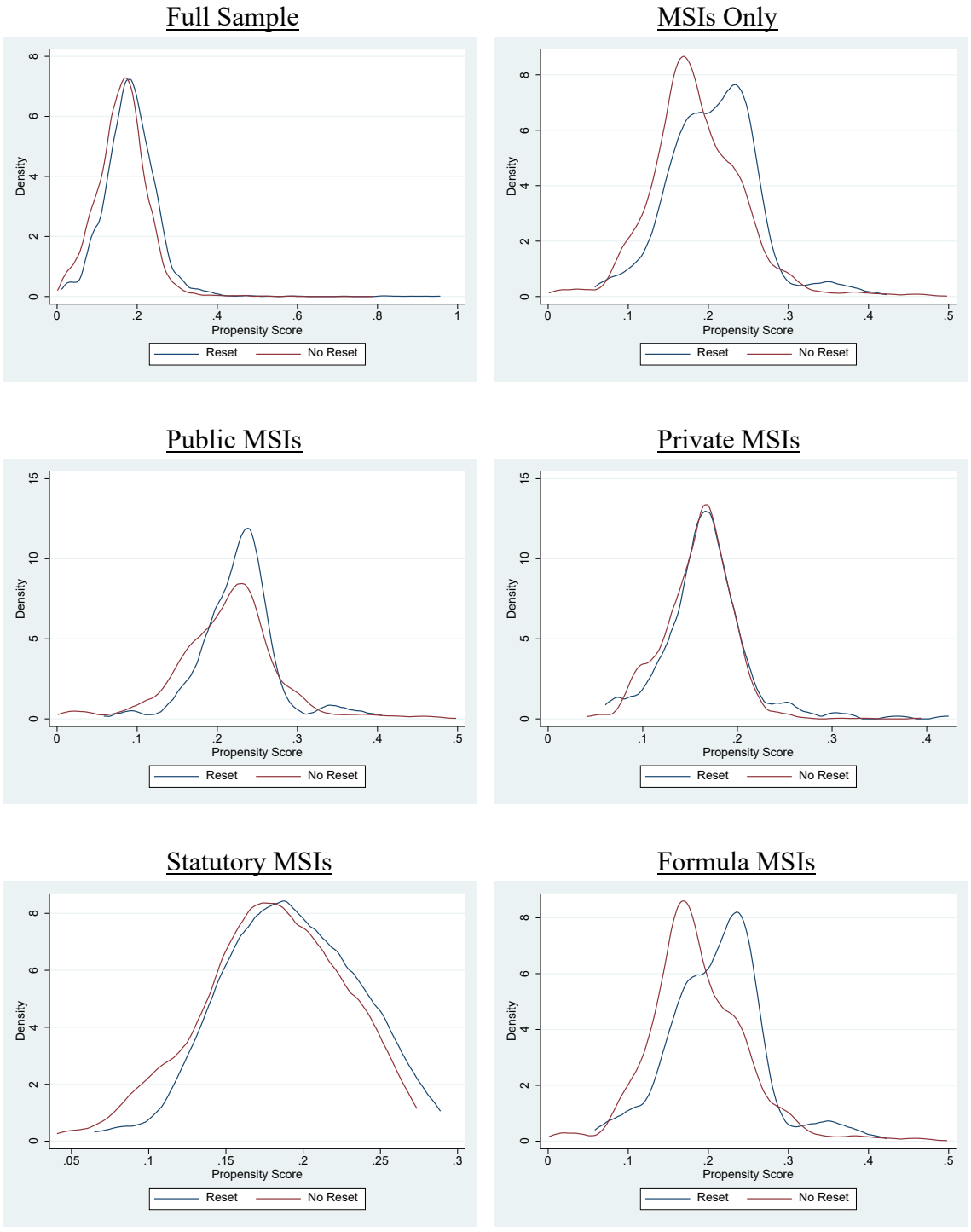
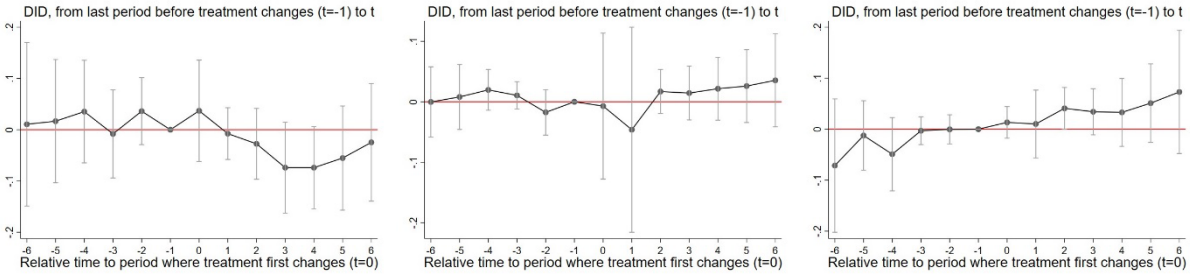


Figure 7: Dynamic Treatment Effects on Enrollment Outcomes

Panel A: Applications | Panel B: Fall Enrollment | Panel C: Pell Enrollment

Full Sample



MSIs only

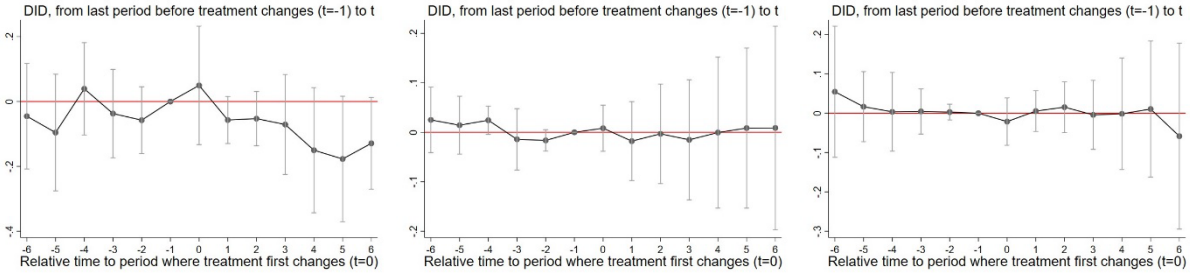
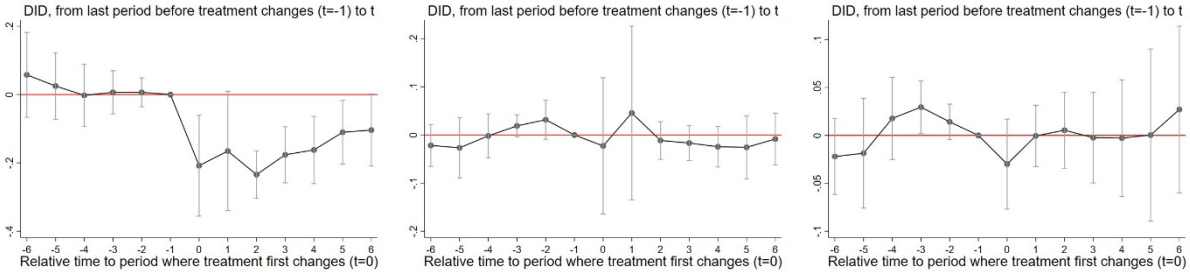


Figure 8: Dynamic Treatment Effects on Finance Outcomes

Panel A: Discount per FTE Panel B: Tuition Rev per FTE Panel C: Total Tuition Rev

Full Sample



MSIs Only

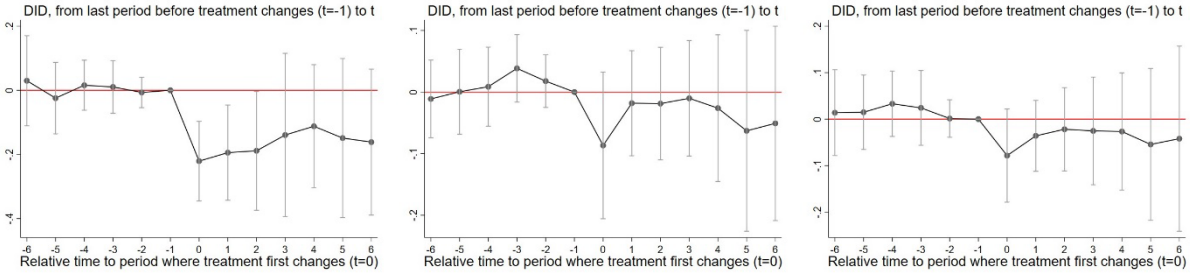
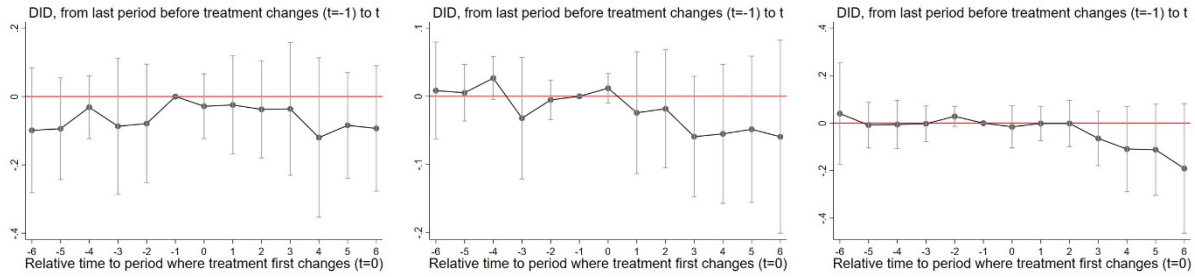


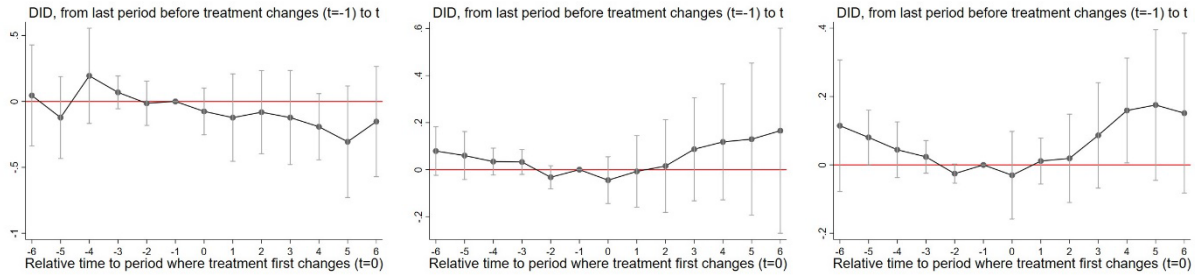
Figure 9: Dynamic Treatment Effects on Enrollment Outcomes, MSI Sub-Groups

Panel A: Applications | Panel B: Fall Enrollment | Panel C: Pell Enrollment

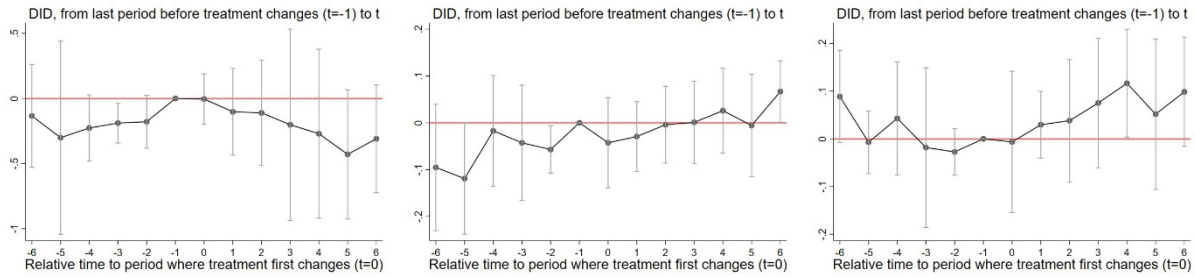
Public MSIs



Private MSIs



Statutory MSIs



Formula-Driven MSIs

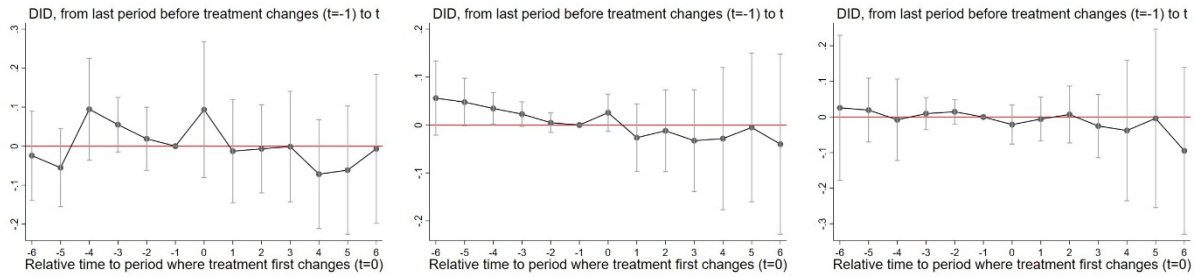
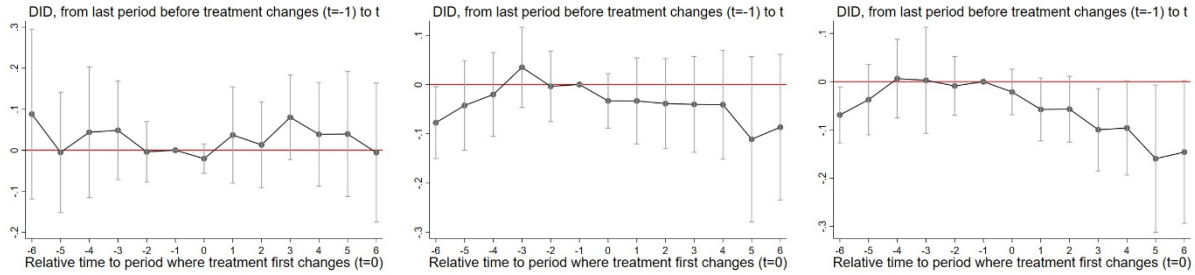
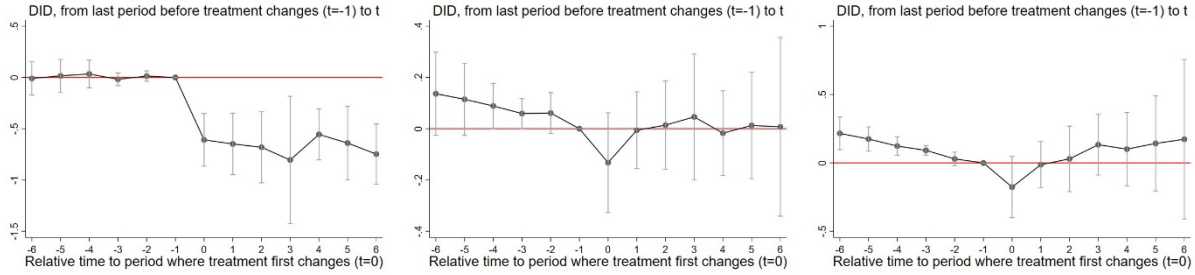


Figure 10: Dynamic Treatment Effects on Finance Outcomes, MSI Sub-Groups
Panel A: Discount per FTE Panel B: Tuition Rev per FTE Panel C: Total Tuition Rev

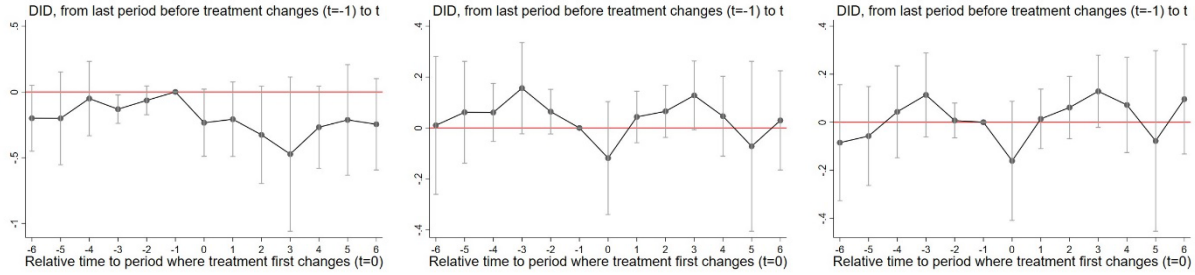
Public MSIs



Private MSIs



Statutory MSIs



Formula-Driven MSIs

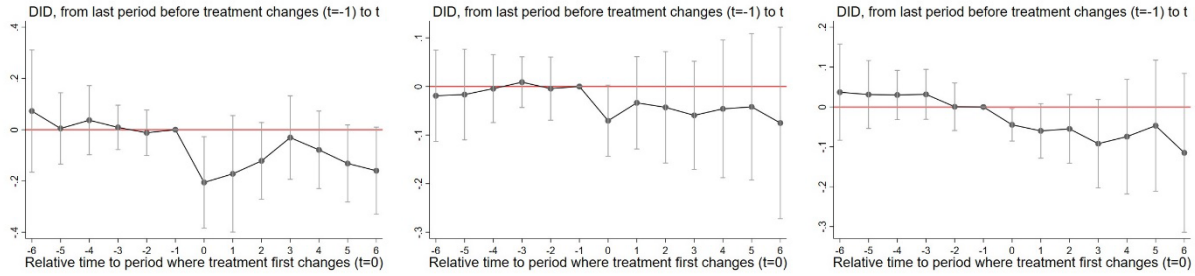
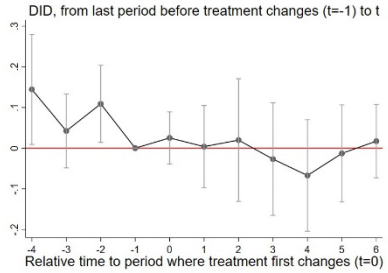


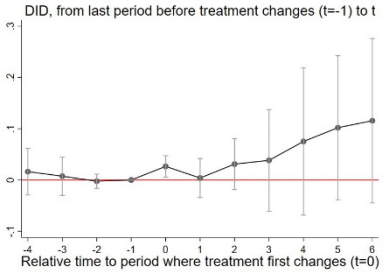
Figure 11: Dynamic Treatment Effects of Large Resets

Full Sample

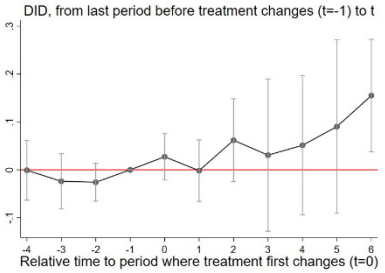
Applications



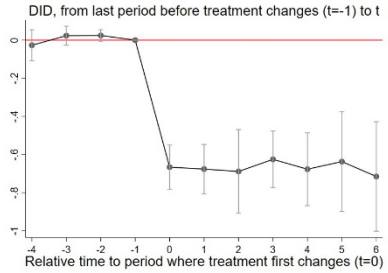
Fall Enrollment



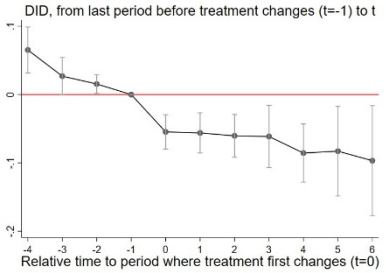
Pell Enrollment



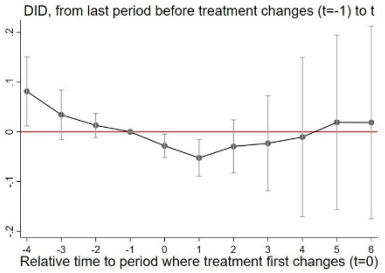
Discount per FTE



Tuition Rev per FTE

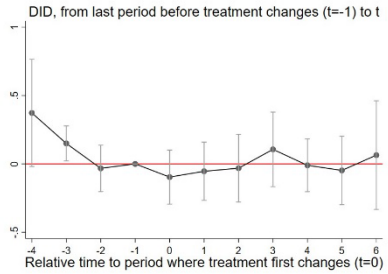


Total Tuition Rev

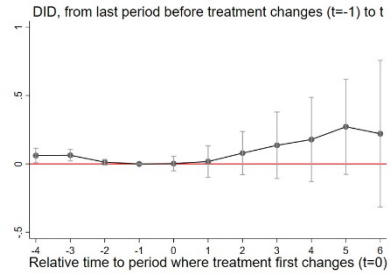


MSIs Only

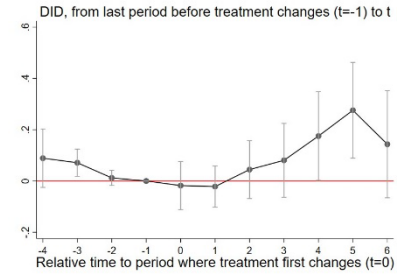
Applications



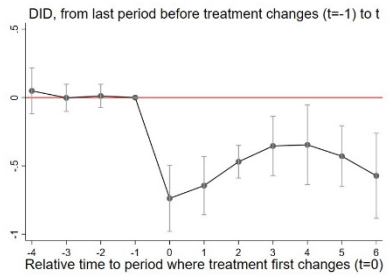
Fall Enrollment



Pell Enrollment



Discount per FTE



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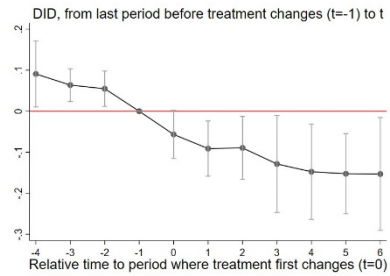
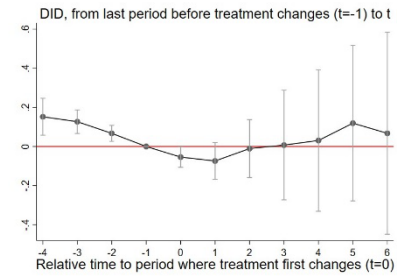


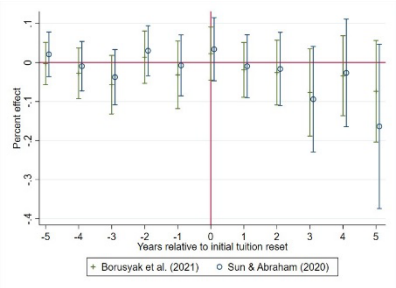
Total Tuition Rev



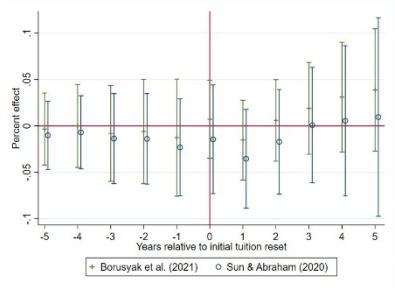
Appendix

Figure A1: Robustness Checks for Full Sample

Applications



Fall Enrollment



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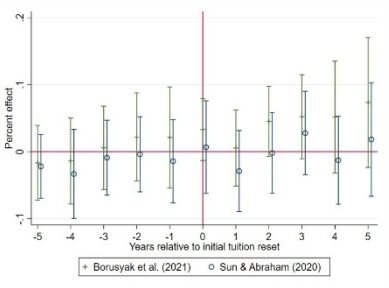

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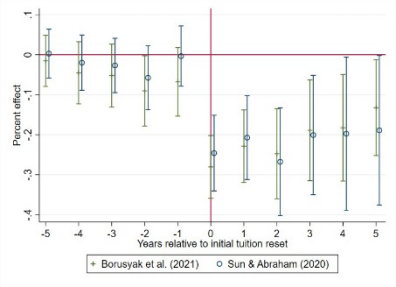

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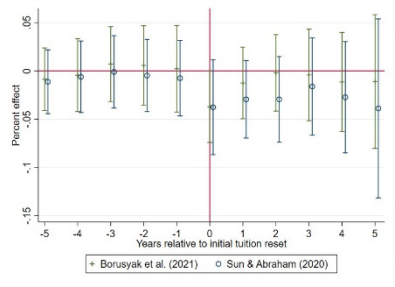

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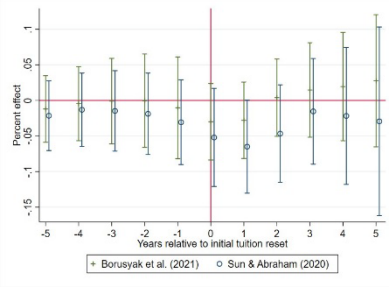
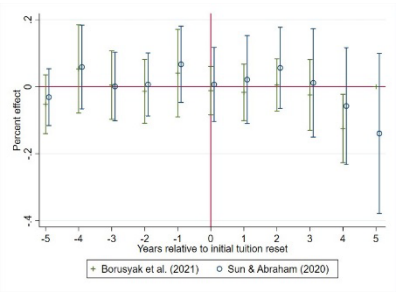


Figure A2: Robustness Checks for MSI Sub-Sample

Applications



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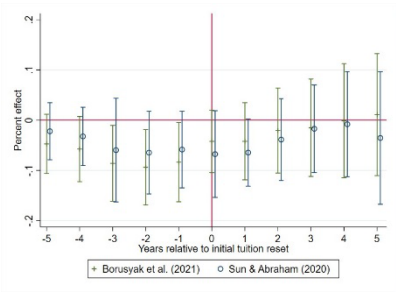

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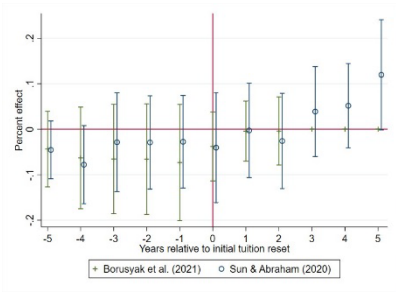

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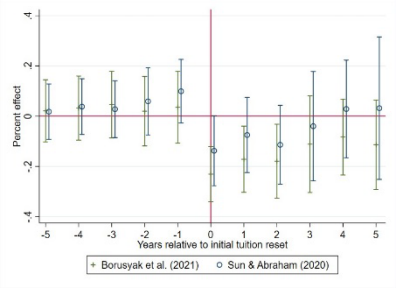

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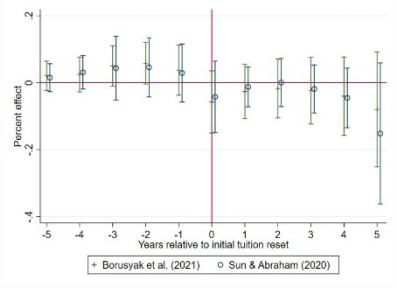

Total Tuition Rev