The Exclusive Nature of Private Solutions to Public Problems:

Evidence from (For-profit) US Charter Schools

ABSTRACT

The growing research on private solutions like CSR initiatives, non-profits, and public-private partnerships (PPPs) for addressing social issues has focused on the effectiveness of these private solutions for their direct recipients; however, the effect of these solutions on non-recipients is not well understood. This poses critical questions: Are these solutions inclusive, meaning do they serve vulnerable populations? What are their broader impacts on non-recipients? Do they generate broader positive impacts, or do they benefit recipients while disadvantaging non-recipients? These concerns are particularly pertinent when private solutions to social issues coexist with and compete against existing public solutions, potentially reducing the latter's effectiveness. In this paper, I examine how private solutions to social issues might negatively impact existing public providers. First, private solutions could diminish support for public providers at the local level, leading to fewer resources raised for the public provider by local communities. Second, private providers, if profit-motivated, might serve more economically viable segments, leaving less viable ones to public providers, thereby increasing the latter's production costs. I explore these mechanisms in the context of US public education, where charter schools (private provider) coexist and compete with traditional public schools (public provider). I find that the entry of charter schools, particularly for-profit ones, reduces local support for traditional public schools (TPS), as evidenced by decreased per-pupil local revenues and fewer successful school referenda for additional funding. Furthermore, using a quasi-natural experiment, I demonstrate that TPS grades exposed to for-profit charter schools see an increase in the proportion of economically disadvantaged and disabled students. I also show that these effects are mostly mitigated if the private provider is organized as a non-profit or if safeguards are put in place to prevent exclusionary behaviors by for-profit private providers.

Keywords: Organizational Forms, Competition, Social Impact, Social Issues and Grand Challenges, SDG4

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INTRODUCTION

In recent years, there has been growing interest among strategic management and organizational theory scholars in understanding the role of private organizations in addressing grand societal challenges such as climate change, poverty, hunger, disease eradication, and infrastructure provision (Margolis and Walsh, 2003; Walsh et al., 2003; Barney, 2005; Mahoney et al., 2009; Ferraro et al., 2015; George et al., 2016, 2024; Etzion et al., 2017; Luo and Kaul, 2019; Jeong et al., 2020; Baumann et al., 2024). Research has documented effective private solutions to societal challenges, including preserving natural ecosystems (Gatignon and Capron, 2023; McGahan and Pongeluppe, 2023), disease eradication (Vakili and McGahan, 2016), delivering disaster aid (Ballesteros et al., 2017; Ballesteros and Gatignon, 2019), and providing quality education (Ouchi, 2008; Angrist et al., 2012; Dobbie and Fryer, 2015). While private solutions can be effective for those who receive them, what remains less explored is the impact that these privately provided solutions might have on those who are left out of the private provision (Walsh et al., 2003; Mahoney et al., 2009; Kaul et al., 2019, 2019). After all, private initiatives such as public-private partnerships (PPPs), corporate social responsibility (CSR) initiatives, or mission-oriented non-profits are not the sole actors trying to address societal challenges (Kaul et al., 2019; Luo and Kaul, 2019; George et al., 2024). Similar solutions are also provided by public actors at various levels, including local, state, or national governments (Luo and Kaul, 2019; George et al., 2024). Considering that, in the near term, public solutions are unlikely to be completely replaced by privately provided solutions to social issues, we must understand not only the effectiveness of privately provided solutions to social issues for their recipients but also who the recipients of these

private solutions are and what impacts they have on non-recipients. Thus, it is important to inquire: *Are privately provided solutions to social issues inclusive, meaning do they serve more vulnerable populations?* And *what impact will they have on competing public solutions?*

Private solutions to social issues may adversely impact existing public providers of the same services in at least two key ways. First, by diminishing political support for the public provider, the introduction of private solutions might reduce the resources available to the public provider for its operations (Arrow, 1951; Kaul et al., 2019). In a democratic society, the provision of a public service requires consensus among the population through a voting mechanism (Arrow, 1951; Kaul et al., 2019; George et al., 2024). If some parts of the population receive the same type of service from a private provider, their support for the public provider may wane (Arrow, 1951; Sen, 1970; Kaul et al., 2019). For instance, if a local government is to operate an effective public road, it needs local residents' support to raise revenues for its operation. However, if some residents use a toll road provided by a private provider through a PPP with the state government, their willingness to support additional revenue requests for the public road provided by the local government diminishes, making it challenging for the local government to successfully pass a municipal bond referendum for additional resources. Thus, the involvement of private providers can potentially lead to fewer resources for public providers of the same service.

Second, many public service providers rely on cross-subsidization to offset the higher costs or lower revenues of serving less economically viable segments with the lower costs or excess revenues of more economically viable ones (Olson and Zeckhauser, 1970; Kaul et al., 2019; Lazzarini, 2020, 2022). Since private providers of solutions to social issues, driven by profit motives, may choose to exclude more vulnerable customer segments with less profit potential and focus on serving primarily the more economically viable segments, they could disrupt the

opportunity for cross-subsidization by the public provider, increase the public provider's operational costs, and undermine its effectiveness. The extent of this impact is contingent on the degree to which a private provider's organizational form is oriented towards profit-seeking (Kaul et al., 2019; Luo and Kaul, 2019; Lazzarini, 2020), and it becomes increasingly pronounced as the organization's design further incentivizes the pursuit of profit. For example, compared to a non-profit organization, a for-profit organization providing public education is more likely to serve wealthier and more educated communities, leaving the resource-constrained and less educated neighborhoods to existing public providers. In summary, the introduction of private solutions to social issues may leave existing public providers and those who continue to rely on them worse off by reducing political support and subsequently revenues for the public provider, as well as increasing production costs due to the public provider being left with a larger proportion of economically nonviable customer segments.

In this paper, I address the above research question within the context of the US public education system, where private providers, known as charter schools, enter contracts with state governments to provide public education (Hoxby, 2003; Cohodes and Parham, 2021; Monarrez et al., 2022). Operating in forty-five states as of 2023, charter schools are the dominant form of private solutions in the US public education system. This context is particularly suitable for exploring my arguments, as it provides a setting where private providers offer competing solutions alongside public providers to address a key societal challenge. Additionally, because I am interested in understanding the comparative efficiency of for-profit versus non-profit private solutions in providing a service indiscriminately, this setting allows for varying only the organizational form of the private provider, noting that the revenues to these private solutions are generally paid by state governments. Besides its importance as a societal grand challenge and its relevance to my theory, public education is a rich empirical context that has long been used to advance our understanding

of organizational scholarship (e.g., March and March, 1977; Meyer and Rowan, 1977; Ouchi, 2006; Teodorovicz et al., 2023; Hasan and Kumar, 2024).

I hypothesize that charter schools might negatively impact TPS in at least two ways. *First*, the entry of charter schools, particularly when profit-motivated, into a region may diminish local support for nearby TPS due to the loss of consensus among local stakeholders. Those transitioning to charter schools will have fewer incentives to support TPS. Considering that TPS rely heavily on local taxes approved through school referenda, this decline in support could lead to reduced revenues for TPS (H1). *Second*, charter schools, particularly those motivated by strong profit incentives, may prioritize profitability over inclusion—i.e., the profit-inclusion trade-off (Luo and Kaul, 2019; Lazzarini, 2020, 2022)—potentially channeling more economically viable students to charter schools and leaving TPS with a higher proportion of economically disadvantaged and special needs students (H2). This shift can challenge TPS's cross-subsidization model, leading to increased per-pupil costs.

These negative spillovers are most pronounced following the entry of for-profit charter schools and that they are mitigated if a charter school is organized as a non-profit (H3). Due to their strong profit incentives, for-profit charter schools are likely to draw away a higher proportion of economically viable student segments (Lazzarini, 2020; Burbano and Ostler, 2021) from nearby TPS compared to non-profits. This leads to a greater negative spillover on the operational costs of nearby TPS by greatly disrupting the TPS cross-subsidization model. Additionally, for-profit charter schools create a greater negative spillover on the local support for nearby TPS by causing a greater misalignment between the interests and capabilities of TPS stakeholders (Mahoney et al., 2009; McGahan, 2023). This misalignment occurs because for-profit charter schools are likely to attract a larger portion of key TPS stakeholders—i.e., affluent families with involved parents—away from them. These are families who have the means but may lose the motivation to support TPS

because they no longer use its services. Meanwhile, those who continue to use and thus have the motivation to support TPS may not have the means for additional support. Besides organizing the charter schools as non-profits, the negative spillovers of for-profit charter schools are mitigated in places where state statutes have put safeguards in place to prevent exclusionary behaviors of for-profit private providers.

To test these arguments, I utilize two panel datasets at school district and the school-by-grade levels. In terms of local support for public school districts, I use a difference-in-differences (DID) approach to show that the entry of charter schools into a region results in reduced per-pupil revenue from local sources, mirrored in the decreased likelihood of proposing and passing school referenda to increase local taxes or issue new bonds for TPS support as well as fewer voluntary fees and donations paid to TPS. I also find that this effect is significantly bigger for the entry of for-profit charter schools compared to non-profit charter schools ($\beta_{non-profit}$ = 0.000 $vs.$ $\beta_{for-profit}$ = −0.042, χ^2 = 7.4, p = 0.006). Besides the DID analysis, I employ an instrumental variable approach as well as a synthetic control approach in supplementary analyses, confirming the robustness of these results.

I also establish a causal link between exposure to charter schools, particularly for-profit ones, and the change in the percentage of economically disadvantaged and special needs students in nearby TPS through a *quasi-natural experiment*. This experiment arises from the typical pattern of charter schools entry, where a new charter school initially offers a limited number of grades and then expands gradually. This setup allows for a comparison between treated grades of nearby TPS and their not yet treated grades. My findings show that grades in TPS exposed to charter schools on average see a 0.6 percentage point (or about 1.2%) increase in economically disadvantaged students. This increase is primarily attributed to for-profit charter schools, with grades in TPS

exposed to for-profit charters experiencing an approximately 2.5 percentage points (or about 4.7%) increase in economically disadvantaged students, compared to unexposed grades in the same TPS. This number is 0.3% for non-profit charter schools and statistically indifferent from zero. Similarly, grades in TPS exposed to for-profit charter schools show an average increase of about 1.8 percentage points (or about 12%) in special needs students compared to 0.5 percentage point (or about 3.3%) for exposure to non-profit charter schools. Further supplementary analysis reveals these negative spillovers occur in places where there are not enough safeguards in statues against the exclusionary behaviors of charter school and that these negative spillovers of even for-profit charter schools are mitigated where state legislators have put in place measures to prevent such discriminatory behaviors.

The contributions of this paper are as follows. Theoretically, I propose two distinct mechanisms through which private solutions to social issues can adversely affect existing public providers: (a) by reducing political support and subsequently the resources raised for public providers, and (b) by increasing the average costs for public providers as a result of private providers attracting more economically viable customer segments away from public providers. Additionally, considering the comparative efficiency of different organizational forms, I theorize that these adverse effects are more pronounced following the entry of for-profit as opposed to nonprofit private providers. Empirically, I present causal evidence supporting these predictions in the context of the US public education system, where for-profit and nonprofit charter schools operate alongside traditional public schools (TPS). I provide evidence that following the entry of a for-profit charter school into a region, local support for nearby TPS diminishes, resulting in lowered revenues and reduced effectiveness of TPS. I also document an increase in economically nonviable student segments in nearby TPS following the entry of charter schools, using a carefully

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identified quasi-natural experiment. Moreover, I demonstrate that these effects are significantly more pronounced with the entry of for-profit charter schools, thus providing evidence supporting the comparative efficiency of nonprofit solutions in addressing social issues. Practically, I highlight the need to consider not only the effectiveness of private solutions for their direct beneficiaries but also who these beneficiaries are and the impact these solutions have on those who continue to rely on public solutions in contexts where both coexist. These findings have policy implications regarding the United Nations 2030 Agenda for Sustainable Development by showing that for-profit private solutions to grand societal challenges, especially in the absence of proper safeguards, may become exclusive in nature, which contradicts the underlying principles of the UN's agenda to "*leave no one behind*" and "*to reach the furthest behind first*" (United Nations, 2018).

THEORETICAL FRAMEWORK

Private Solutions Undermine Local Support for Public Solutions

As private solutions to social issues become increasingly common, it is crucial to recognize that private actors are not the only ones addressing social problems (Maitland et al., 1985; Kaul and Luo, 2018; Kaul et al., 2019; Luo and Kaul, 2019). Instead, they often provide services that are also offered by other actors, such as public providers and collectively governed local initiatives (Luo and Kaul, 2019; Lazzarini, 2022; George et al., 2024). For example, in the United States, privately operated charter schools coexist alongside traditional public schools, privately managed toll roads run adjacent to publicly maintained ones, and renewable energy producers such as the Green Power Partnership—public-private partnerships (PPPs) between for-profit private corporations and the EPA—coexist alongside municipality-owned utility companies. Similarly, Walmart's Zero Waste initiative, which collects and recycles millions of pounds of recyclable materials every year, operates alongside municipality-owned recycling centers. As a result, private

solutions to social issues should not be viewed as isolated fixes to longstanding problems. Rather, they represent shifts in existing governance arrangements (North, 1990), impacting not only those who utilize privately provided services but also potentially influencing the supply and effectiveness of services provided by other actors, including the public sector (Olson and Zeckhauser, 1970; Mahoney et al., 2009; Kaul et al., 2019; Luo and Kaul, 2019). The coexistence of private solutions to social problems alongside public solutions means that the two organizational forms will be competing against one another. While the premise of public-private competition is to improve the efficiency of public providers, which are generally less efficient in finding innovative, cost-effective solutions (Williamson, 1999; Luo and Kaul, 2019), it is important to understand how the dynamics of this induced competition change the access to resources for public providers to ensure fair and effective competition.

Existing public providers often depend on funding from local revenues, primarily sourced from local tax funds. The effectiveness and supply of public solutions at the local level hinge on the continuous willingness of citizens, as key stakeholders, to self-tax in order to finance these local public goods. For example, residents in a school district may consent to pay property taxes for the public education of children in their district, with referenda often held to decide on additional funding for local schools. This willingness to support public provisioning is shaped by the perceived benefits individuals gain from their contributions and the consensus among individuals (Arrow, 1951; Sen, 1970); thus, if some proportion of society receives the same services as provided by a public provider from a private provider, they may see less benefit in the government provision of the service resulting in the loss of consensus among stakeholders about the value of public solutions (Arrow, 1951; Kaul et al., 2019; George et al., 2024). The resulting heterogeneity in benefits received from the public good among local stakeholders can complicate

sustaining cooperation in support of public goods (Ostrom, 2005; Poteete et al., 2010). In other words, non-local interventions such as privatizations *"would crowd out public problem solving at regional and local levels"* (Ostrom, 2005, p. 255)[1]. In light of these considerations, I propose that:

Proposition 1: The emergence of private solutions will undermine local support leading to fewer resources for publicly provided solutions.

Private Organizations Prioritize Profit Over Inclusion

While prior research provides evidence that private solutions to social issues may benefit their direct recipients, it is important to understand who these recipients are and the extent to which vulnerable groups are included in these private solutions. Understanding the extent to which private solutions to social issues are inclusive has implications not only for social justice, but also for the economic viability of competing public providers. If private solutions disproportionately focus on more economically viable customer segments, they will leave a disproportionately larger share of less economically viable customer segments (either due to the higher cost of providing the service or the lower willingness to pay for the service) to competing public providers. The disproportionate loss of economically viable customer segments to private providers can disrupt the public providers' cross-subsidization model, which offsets the higher costs or lower revenues from less economically viable segments with the lower costs or higher revenues from more economically viable segments (Olson and Zeckhauser, 1970; Kaul et al., 2019; Lazzarini, 2020, 2022). This disruption could lead to increased average costs for public providers, potentially rendering them unable to compete effectively.

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[1] Besides the crowding out of the local support for public solutions, the engagement of private entities in solving public issues may prompt national governments to free-ride on private contributions (Becker and Lindsay, 1994; Kaul and Luo, 2018; Kaul et al., 2019), leading to crowding out of funding by higher level governments and, consequently, a decreased supply and effectiveness of public solutions for those still dependent on them.

Driven by strong market incentives, private providers might focus on more economically viable segments of the population (Luo and Kaul, 2019; Lazzarini, 2020; George et al., 2024). This is especially true in contexts where there is substantial heterogeneity in service provision costs or in the revenue-generating capacity of different recipient groups. For instance, educating students with certain special needs might be significantly more expensive compared to those without such conditions to achieve the same outcomes; students from families with highly educated parents could incur lower education costs due to beneficial parental involvement, allowing schools to operate with fewer teachers per pupil; and wealthier parents might have the means to make additional donations or pay extra for school activities. Consequently, when there is substantial heterogeneity in the profit potential of different customer segments, private providers may direct their services towards more economically viable segments, thus prioritizing profit over inclusion (Kaul et al., 2019; Lazzarini, 2020).

The profit-inclusion trade-off can manifest in various contexts. For example, a private water and sanitation provider may strategically position its operations near wealthier segments to charge higher fees (Lazzarini, 2020), a privately operated charter school might limit access to information for parents of students with special needs (Bergman and McFarlin Jr, 2018; Rivera and Tilcsik, 2023), a CSR waste management initiative may focus on recycling waste that are less costly to collect, and private R&D lab may choose not to develop medications for diseases predominantly affecting poorer populations (Vakili and McGahan, 2016). Regardless of the context, this trend has an important implication for co-existing public providers: they are often left to serve a larger segment of economically nonviable customer segments. Hence, I propose:

Proposition 2: Following the entry of private providers into a region, nearby public providers are likely to experience an increase in the proportion of economically nonviable customer segments.

Considering that public providers typically rely on cross-subsidization between more and less economically viable segments, the departure of economically viable recipients limits this cross-subsidization opportunity, leading to higher per-unit production costs for public operators (Olson and Zeckhauser, 1970; Kaul et al., 2019). This requires above-average investments to maintain average performance. The combined effect of reduced revenues due to diminished local support for the public provider and increased costs from the loss of economically viable segments could significantly undermine the economic viability of public providers while maximizing the private providers' profits. In the next section, I explain how this dynamic is most pronounced following the entry of for-profit private providers.

Greater Downsides of For-Profit Private Solutions

Previously, I discussed how the emergence of private solutions can lead to fewer resources and an increase in economically nonviable customer segments for public providers. In this context, it is important to recognize that while private managers generally have stronger incentives than their public counterparts (Williamson, 1999; Luo and Kaul, 2019; Lazzarini, 2022), the intensity of these incentives varies depending on their organization's governance form (Luo and Kaul, 2019). Specifically, managers in non-profit organizations face weaker incentives compared to those in for-profit organizations for several reasons (Luo and Kaul, 2019; Lazzarini, 2020). First, non-profits are bound by a non-distribution constraint, preventing the distribution of profits or surplus funds to residual claimants, including managers and board members (Luo and Kaul, 2019). This restriction diminishes the profit-maximizing motives of non-profit managers relative to those in for-profit organizations, reducing their profit-seeking behavior. Second, non-profits typically attract managers whose values are aligned with the organization's mission (Gartenberg et al., 2019; Luo and Kaul, 2019; Gartenberg and Zenger, 2022; Gartenberg, 2023), which is often

centered on serving vulnerable groups. This value alignment tends to decrease the likelihood of excluding economically nonviable segments. Third, due to funding from impact investors, non-profits undergo enhanced scrutiny, which further curbs the profit-maximizing motives of their managers (Marquis et al., 2016; Berrone et al., 2016; Seo et al., 2021). Consequently, one may anticipate that for-profit organizations, compared to non-profits, are more inclined to serve economically viable segments, leaving the economically nonviable ones to public providers (Lazzarini, 2020; Burbano and Ostler, 2021).

Building its implication for social justice, leaving behind the economically viable I have discussed how the introduction of private solutions might lead to decreased support and fewer resources for public service providers due to a loss of consensus among local stakeholders (Arrow, 1951; McGahan, 2023), particularly as those who no longer utilize public services have less incentive to support them (Arrow, 1951; Sen, 1970; Ostrom, 2005). Here, I argue that the extent of this loss depends on who transitions to private providers (Felin and Hesterly, 2007; Bermiss and Murmann, 2015). If the more resourceful segments of the population switch to private providers, the adverse effect on public providers access to resources might be greater. This is because those who previously had the ability and willingness to support the public provider will no longer have the motivation to do so. Meanwhile, those who continue to use public services and have the motivation to support them may lack the resources for additional support. Essentially, the alignment of stakeholders' interests and capabilities is key to garnering additional support for public services (Mahoney et al., 2009; McGahan, 2023). Given that for-profit providers tend to disproportionately attract economically viable population segments – i.e., those with higher willingness to support public provider and lower cost – compared to non-profits (Lazzarini, 2020, 2022), they are likely to create greater negative spillovers for competing public providers. Considering these factors, I propose:

Proposition 3: Compared to the entry of non-profit providers, the entry of for-profit providers leads to a) a larger decline in support for nearby public providers, and b) a greater increase in the proportion of economically nonviable customers at nearby public providers.

EMPIRICAL SETTING AND HYPOTHESES

Empirical Setting

The empirical setting of this research is the US public education system, where private providers of public education, known as charter schools, operate alongside public providers, referred to as traditional public schools (TPS) (Jones, 2018; Cohodes and Parham, 2021). Charter schools represent the most prevalent form of school choice within the US public education system. As of 2020, there were over 7,000 charter schools in 44 states, serving approximately 3 million students, or about 6% of U.S. public school students (Cohodes and Parham, 2021).

This context is particularly suitable for exploring the arguments in this research because it provides a setting where private providers offer competing solutions alongside public providers to address a key societal challenge. Additionally, because charter schools can be managed both by for-profit and non-profit private organizations, it provides a setting to understand the comparative efficiency of different private organizational forms in settings where a service needs to be provided indiscriminately. Also, because both for-profit and non-profit charter schools are privately managed and publicly funded by state and federal governments, the setting allows for varying only the organizational form of the private provider while controlling for the effect of revenues streams that often varies between for-profit and non-profit organizational forms. Lastly, public education is a rich empirical context that has long been used to advance our understanding of organizational scholarship making this study part of a longer tradition of strategy and organizational scholarship

(e.g., March and March, 1977; Meyer and Rowan, 1977; Ouchi, 2006; Teodorovicz et al., 2023; Hasan and Kumar, 2024).

While charter schools and TPS are both part of the public education system, they differ in some aspects. *First*, charter schools are primarily funded by state governments[2]. They operate under a contract with the state, known as the charter, and typically do not receive local funds such as property taxes[3]. In contrast, TPS receive a large portion of their revenues from local sources, including property taxes, approved by district residents via school referenda (Abott et al., 2020; Brunner et al., 2021). These referenda encompass bond votes for capital projects, repayable through future property taxes, and tax levy votes for operational expenses (Lifto, 2019). *Second*, charter schools, due to their contractual relationship with the state, can enroll students statewide, unlike TPS, which generally enroll only district residents. TPS are obligated to enroll all students within their district boundaries, while charter schools require applications from prospective students. This application process varies, with some states having centralized systems and others leaving it to individual schools. Due to typically high demand, charter schools often resort to lotteries for those admitted to their applicants pool (Cohodes and Parham, 2021). *Third*, TPS are public entities operated by local public school districts, whereas charter schools are private organizations. In 2020, about 88% of charter schools were managed by nonprofit entities, with the remainder run by for-profit operators. Within the nonprofit sector, the majority were freestanding nonprofits, authorized for one or two schools at different levels, while others were managed by Charter Management Organizations (CMOs) operating multiple schools. The largest nonprofit

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[2] Both charter schools and TPS are also eligible for federal government funding, which generally accounts for a smaller share of per pupil funding and is allocated similarly to both types of schools.
[3] This is with the exception of states of Alaska, Colorado, Florida, New Mexico, and Ohio that allow for some access to property taxes by charter schools. In empirical analysis, I will test for the robustness of the findings to exclusion of these states.

network, Knowledge is Power Program (KIPP), operated 159 schools, and the largest for-profit network, Academica, managed 141 schools (Angrist et al., 2012; Cohodes and Parham, 2021; Miron and Gulosino, 2021). This mix of for-profit and non-profit operators coexisting along TPS offers a setting for testing the theory behind this research.

Literature on Charter Schools

Since the start of the charter school movement in the US, there has been extensive research on charter schools by scholars from various disciplines including economics, education, and public policy. Despite the extensive investigation of charter schools some areas remain underexplored. *First*, research on charter schools is primarily focused on the effectiveness of charter schools for their direct recipients (e.g., Angrist et al., 2010, 2012, 2013; Abdulkadiroglu et al., 2011, 2016, 2017; Dynarski et al., 2018) while paying less attention to the competitive impacts of charter schools. A recent literature review of charter schools research by Cohodes and Parham (2021, p. 23) concluded that despite being "*the most policy-relevant*" ... "*research base on competitive effects [of charter schools] is less broad than the base of work examining the impacts of charters on the students they serve directly*" and suggested that "*researchers should target this area for additional attention*" (Cohodes and Parham, 2021, p. 23).

Even the available studies "*assessing the competitive impacts of charters have found ... mixed competitive impacts*" (Cohodes and Parham, 2021, p. 23). For example, studies find "*mixed evidence on the impacts of charter schools on district finances*" (p. 30): Ridley and Terrier (2023) find that charter school expansion in Massachusetts left the districts' per-pupil revenues *unchanged*, whereas Jones (2018) found that charter school expansion led to *reduced* per-pupil spending for nearby TPS in a national study. Another "large-scale study finds charter entry generates *more* revenue per pupil for district schools" (emphasis added, Cohodes and Parham, 2021, p. 1).

Such mixed findings on the competitive impacts of charter schools suggest that a more nuanced approach is needed. Strategic management, with its long tradition of studying competition, is well-positioned to reconcile these mixed findings, particularly through the lens of *organizational forms* literature (Williamson, 1991, 1991; Luo and Kaul, 2019). This approach takes into account the heterogeneity in spillover effects induced by charter schools of different organizational forms. In this research, I seek to contribute to the charter schools literature by: 1) moving beyond the direct effects of charter schools to explore their competitive effects, thus responding to the recent call for research in this area by charter school researchers (Cohodes and Parham, 2021), and 2) reconciling the mixed findings on the competitive effects of charter schools by distinguishing between the competitive effects of for-profit vs non-profit charter schools.

Charter Schools and Local Support for Nearby Traditional Public Schools

For about three decades, the US has been engaged in ongoing debates regarding charter schools. Critics argue that charter schools siphon off talented students and resources from TPS, exacerbating the challenges faced by these already struggling institutions (Epple et al., 2016; Kho et al., 2022). On the other hand, supporters assert that charter schools introduce necessary competition, which could enhance the overall efficiency of the public education sector (Chubb and Moe, 1990; Hoxby, 2003; Preston et al., 2012). At the heart of this debate is whether any competition induced by charter schools is accompanied by sufficient resources to enable TPS to remain competitive, or if TPS are left with more costly operations and fewer resources, struggling against, in principle, more efficient private providers. This issue is critical because, without adequate resources, especially in the face of increased competition from charter schools, a decline in TPS performance both locally and nationally seems inevitable.

Given that TPS typically depend on locally raised taxes for funding, their effective functioning relies on the continuous support of local residents to finance their activities. It is thus crucial to assess how the rise of charter schools influences local support for TPS. As charter schools usually do not receive local funding, it is likely that those individuals transitioning to charter schools will have little incentives to support TPS (Arrow, 1951; Sen, 1970). For example, individuals who no longer send their children to TPS may be less motivated to back increased tax levies for school referenda or to support bond issuance for enhancements in district TPS. Moreover, even if the majority of local residents continue to utilize TPS, the increased heterogeneity in benefits received from TPS can raise bargaining costs and make negotiation processes more complex (Poteete and Ostrom, 2004; Ostrom, 2005), decreasing the chance of community members initiating or reaching a consensus for extra TPS support. Therefore, the presence of charter schools in a community could complicate the process of reaching a collective agreement to support TPS and may "crowd out group-regarding behavior in favor of greater self-interest" (Ostrom, 2005, p. 257). In alignment with this discussions and Proposition 1, I hypothesize:

Hypothesis 1: The entry of charter schools negatively impacts local support for nearby TPS.

Charter Schools and Demographic Shifts in Nearby TPS

In the previous section, I hypothesized that the entry of a charter school leads to a decline in local support for TPS, resulting in reduced resources for educating students who continue to attend these public institutions. Furthermore, as discussed prior to Proposition 2, private organizations, motivated by stronger profit-maximizing incentives than their public counterparts, tend to serve more economically viable customer segments while often excluding less economically viable populations (Luo and Kaul, 2019; Lazzarini, 2020; George et al., 2024). In the context of US

public education, two key populations warrant specific attention: 1) students classified as economically disadvantaged, defined as those whose parents do not have a high school diploma or who participate in the free/reduced price meal program due to low family income, and 2) students classified as special education, defined as those whose educational needs must "be determined individually and designed to meet [their] unique needs in the least restrictive environment", according to the Individuals with Disabilities Education Act of 1977 (EdSource, 2023). Enrolling non-economically disadvantaged students can be associated with reduced costs, increased revenues, and improved provider performance compared to enrolling economically disadvantaged students. This is due to factors such as peer effects (Dobbie and Fryer, 2014; Abdulkadiroglu et al., 2020), opportunities for additional financial support and parental involvement (Calarco, 2020), parental investments in children's human capital (Shea, 2000), and resources available within parents' networks (Cox et al., 2021). Similarly, students with special needs often require additional investments that may increase a provider's costs, leading to potential discrimination against special needs students (Bergman and McFarlin Jr, 2018; Rivera and Tilcsik, 2023). Given that private providers are likely to prioritize profit over inclusion, it is reasonable to expect that these two groups may be increasingly left out of charter schools, shifting the burden of their education primarily to TPS. Based on these considerations, I hypothesize that:

Hypothesis 2: Following the entry of charter schools, there will be an increase in the percentage of 1) economically disadvantaged, and 2) special needs students in nearby TPS.

The Greater Downsides of For-Profit Charter Schools

As previously discussed, the incentives of private managers differ based on the governance structure of their respective organizations (Williamson, 1996; Luo and Kaul, 2019). Private managers in non-profit organizations generally face weaker incentives than those in for-profit

organizations for a variety of reasons (Williamson, 1999; Luo and Kaul, 2019; Lazzarini, 2022). First, non-profit organizations are subject to non-distribution constraints, which prevent the distribution of profits to stakeholders, including managers (Luo and Kaul, 2019). Second, due to their mission-driven nature, non-profit organizations typically attract managers whose motivations align with the organization's purpose (Gartenberg et al., 2019; Gartenberg, 2023). This alignment makes them less inclined to prioritize profit over their mission (Luo and Kaul, 2019). For instance, a non-profit charter school committed to providing equal opportunities to vulnerable students would likely enroll students who are most in need, as opposed to focusing solely on profit. Third, non-profits often receive funding from impact investors and thus undergo scrutiny from these investors, who are focused on evaluating the organization's contributions to its social mission (Lazzarini, 2020). Consequently, the profit-maximizing incentives and, therefore, the profit-inclusion trade-off are expected to be weaker in non-profit than in for-profit charter schools.

As discussed earlier, *who* departs an organization plays a key role in determining the performance and continued economic viability of the organization (Felin and Hesterly, 2007; Bermiss and Murmann, 2015; Bermiss and Greenbaum, 2016). Since non-profit charter schools typically do not give precedence to profit over inclusivity, they are less likely to cause misalignments between the capabilities and willingness to support TPS within their local communities. Thus, when a non-profit charter school enters an area, it is expected that those who remain in TPS, and have a stronger incentive to support them, will also have the resources necessary to do so. As a result, the impact on local support for TPS following the entry of a non-profit charter school is anticipated to be less severe compared to that following the entry of a for-profit charter school. Based on these considerations and the rationale behind Proposition 3, I hypothesize that:

Hypothesis 3: Compared to non-profit charter schools, the entry of for-profit charter schools leads to a) a larger decline in local support for nearby TPS, and b) a greater increase in the percentage of 1) economically disadvantaged and 2) special needs students in nearby TPS.

DATA AND METHODOLOGY

To test the proposed hypotheses, I construct two panel datasets at different levels of analysis: 1) A *school district-by-year* panel to assess the impact of charter schools entry on local support for nearby TPS. School districts represent the most granular level at which locally collected revenues are reported annually. 2) A *school-by-grade-by-year* panel to examine the impact of charter schools on the percentage of economically disadvantaged and special needs students in nearby TPS. Several data sources are utilized to construct these panels.

I use the Common Core Data (CCD), maintained by the National Center for Education Statistics (NCES) under the U.S. Department of Education. CCD encompasses both fiscal and non-fiscal aspects of public elementary and secondary education in the U.S. The fiscal component (survey F-33), which provides data at the school district level, includes information on revenues from local, state, and federal sources. The non-fiscal component collects data on various aspects of US public education at both the school and district levels, such as student numbers by race and grade, range of grades offered, and school types. I use district level CCD data to measure local support for TPS, enrollment, racial diversity, district-wide percentage of students in special education, and district-wide percentage of English learning students.

Additionally, to further assess local support for TPS, I have compiled a unique dataset of school referenda. School referenda are an important means through which communities raise additional funds for their local schools, either through issuing debt in form of school bonds for capital investments (such as construction or learning equipment purchase) repayable via future

property taxes, or by raising local taxes. These issues are proposed, campaigned for, and voted on by the entire community in local referenda, and a successful vote to issue a bond or to increase tax levies is thus a direct measure of a community's local support to invest in its schools. Unfortunately, I am only able to access data on school referenda for the select group of states[4], so my analysis with this alternative measure is limited to a sample of school districts in those states. These are large states, however—together accounting for 46% of students in US public schools in 2018-19

To measure the percentage of economically disadvantaged and special needs students, I use data from the EDFacts system, which collects aggregated test score data from each state's standardized testing program. The publicly available EDFacts data includes counts of economically disadvantaged and special needs students by school and grade since the 2009-2010 school year for grades three to nine.

For charter school types, I use data licensed from the National Alliance for Public Charter Schools (NAPCS), supplemented with other sources such as 990 tax filings and reports from the National Education Policy Center (Miron and Gulosino, 2021). I also use Census data, particularly Small Area Income and Poverty Estimates (SAIPE), to control for poverty, as well as the American Community Survey (ACS), using 5-year estimates covering all school districts for a set of additional control variables. Moreover, I obtain student achievement data from the Stanford Education Data Archive (SEDA) by Fahle et al. (2021), providing achievement data at various levels of aggregation including district by grade by subject, which I use in a supplementary

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[4] from states including Arizona, California, Colorado, Illinois, Indiana, Michigan, Mississippi, New Jersey, South Carolina, Texas, Washington, and Wisconsin, enrolling approximately 46% of students in the U.S. public education system.

analysis. Table 1 provides summary statistics of the two panel datasets. In the following sections, I

will explain the variables used in this research.

Dependent Variables

Local Support for Traditional Public School. To assess local support for TPS, I employ two

measures. My main measure is the *per pupil local revenue*, derived from the CCD[5]. The second

measure, which I use as part of a supplementary analysis, is the number of successful school

referenda passed by a school district within a four-year moving window (to coincide with the

general election cycle). School referenda are an important means through which communities raise

additional funds for their local schools, either through issuing debt in form of school bonds for

capital investments (such as construction or learning equipment purchase) repayable via future

property taxes, or by raising local taxes. These referenda are proposed and voted on by the entire

community, and a successful vote to issue a bond or to increase tax levies is thus a direct measure

of a community's support for TPS. Unfortunately, the data on school referenda is only available

for thirteen states, so the analysis with this alternative measure is limited to a sample of school

districts in those states. These are large states, however—together accounting for 47% of students in

US public schools in 2018-19, so it can be a reasonable alternative measure to understand the

underlying mechanisms behind local support for TPS.

Economically Disadvantaged and Special Needs Students. To measure the percentage of

economically disadvantaged and special needs students in nearby TPS, I utilize EDFacts data at the

school-by-grade level. Since this data covers only grades three to nine, as a robustness test for H2

and H3b hypotheses, I perform an analysis using all school-by-grade-by-year observations. This

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[5] All financial figures are adjusted to 2019-dollar values using the Consumer Price Index.

analysis assesses the impact of charter schools on the racial composition of school grades, testing for an increase in historically economically disadvantaged racial groups (i.e., Black and Hispanic students) in nearby TPS, alongside a decrease in more economically advantaged groups (i.e., White and Asian students), if the hypotheses holds.

Independent Variables

Charter School Entry. My independent variable to assess local support for TPS is the *entry of charter schools* within the focal school district boundaries[6]. To test for the differential impact of for-profit and non-profit charter schools, I use separate dummy variables for the entry of *for-profit* and the *non-profit* charter schools in a school district.

School-Grade Exposure to Charter Schools. To assess the impact of charter schools on the percentage of economically disadvantaged and special needs students in nearby TPS, I use the *TPS school-grade exposure to charter schools* variable. This dummy variable indicates if a charter school within the same district offers the same grade as the TPS in a given year[7]. Additionally, to differentiate between for-profit and non-profit charters, I use two dummies: *school-grade exposure to for-profit charters* and *school-grade exposure to non-profit charters*.

Other Variables

When testing for local support for TPS, I control for time-varying district-level characteristics that could affect per pupil local revenue and school referenda outcomes. These control variables include enrollment, median income, income Gini, poverty rate (%), number of private schools,

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[6] Considering that charter schools can enroll students statewide, their impact may extend to adjacent districts. Analyses including charter schools in either focal or neighboring districts yield consistent results but the spillover effects diminish from the focal district to neighboring districts. Thus, I focus on the spillover effects on the focal district in which charter schools are located.

[7] Again, considering that charter schools can enroll students from across a state, I conduct a robustness test examining the effect of exposure to charter schools in either focal or neighboring districts, finding consistent results.

percentages of students in special education, percentages of English language learners, and racial diversity, due to its potential influence on local public goods provision (Alesina and Ferrara, 2005)[8]. I also utilize SEDA data (Fahle et al., 2021) on student achievement at the district-grade-subject-year level to evaluate the impact of charter schools entry on student achievement in nearby TPS. All analyses include fixed effects to control for unobserved time-invariant heterogeneity and general trends affecting all districts.

When testing the effect of charter schools on the percentage of economically disadvantaged or special needs students in nearby TPS, the analysis compares treated and control grades within the same school. Consequently, fewer time-variant variables differ across grades of the same school. Nevertheless, I control for 1) the *number of TPS offering the grade* each year, to account for potential student redistribution due to changes in the number of TPS, 2) the *number of private schools offering the grade* each year, to account for potential student redistribution due to entry or exit of private schools, 3) the *number of magnet schools*[9] *offering the grade* to account for potential redistribution due to changes in the number of magnet schools, and 4) *school-grade enrollment*, acknowledging that percentage measures for larger grades are less sensitive to student redistribution across schools. Additionally, I include a set of fixed effects, detailed in the next section.

Methodology

Charter Schools & Local Support for nearby TPS. I use difference-in-differences (DID) combined with matching to test the hypotheses about the relationship between the entry of charter schools and the local support for TPS (H1 and H3a). While the full sample meets the parallel pre-trend assumption, I also show results using a subsample constructed using Coarsened Exacting Matching

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[8] For robustness, additional controls like racial percentages, cost of living index, student achievements, number of schools, property prices, and adults educational attainment levels are included, yielding consistent results.
[9] Magnet schools are public schools with specialized curricula or programs designed to attract a diverse student body from across a school district or region.

(CEM) (Iacus et al., 2012) well as a sample constructed using propensity score matching (PSM). Following the analysis of charter schools' location choice presented in Appendix A, I find that charter schools are more likely to enter school districts with higher student enrollment, higher median income, higher income inequality, and a higher racial education gap – i.e., the difference in the proportion of people with a college education across different racial groups. Accordingly, I construct my CEM and PSM matched samples by matching on these variables. I start the analyses by estimating the following difference-in-differences (DID) equations:

$$y_{it} = \beta_{charter} \text{Treated Charter}_i \times \text{Post Charter Entry}_{it} + \delta X_{it} + \eta_i + \gamma_t + \epsilon_{it} \quad (1)$$

$$y_{it} = \beta_{for-profit} \text{Treated For-profit}_i \times \text{Post For-profit}_{it} + \beta_{non-profit} \text{Treated Nor-profit}_i \times$$
$$\text{Post Non-profit}_{it} + \delta X_{it} + \eta_i + \gamma_t + \epsilon_{it} \quad (2)$$

where y_{it} is the per pupil local revenues for nearby TPS, X_{it} is the vector of control variables, η_i indicates the district fixed-effects, and γ_t[10] the year fixed effects. Given that charter schools do not randomly choose their locations, it is essential to confirm that treated school districts on are the same trajectory as and control districts by testing for the parallel pre-trend assumption. For this purpose, I also conduct event studies of the effect of charter school entry by estimating the following equations.

$$y_{it} = \sum_{k=-K}^{K} \beta_{k,Charter} \text{Treated Charter}_{i,t-k} \times \text{Time to Charter Entry}_{it=k} + \eta_i + \gamma_t + \epsilon_{it} \quad (3)$$

I also estimate the equation (3) separately for for-profit and non-profit charter schools' entry making sure that I isolate the effect of for-profit and non-profit entries separately while avoiding the contamination by the entry of the other charter school types (either for-profit or non-profit). Thus, I would be comparing districts solely treated by *either* for-profit or non-profit charter

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[10] An alternative explanation in this analysis is that changes in state policies that result in lowered support for TPS may coincide with the entry of a charter school making it appear that the charter school entry results in lowered local support for TPS. To rule out this explanation, I also run fixed effect regressions including *state × year* (γ_{st}) fixed effects and find consistent results.

schools with districts that were not treated by either type. I do so by estimating the following equations:

$$y_{it} = \sum_{k=-K}^{K} \beta_{k,\text{for-profit}} \text{ Treated For-profit}_{i,t-k} \times \text{Time to For-profit Entry}_{it=k} + \eta_i + \gamma_t + \varepsilon_{it} \qquad (4)$$

$$y_{it} = \sum_{k=-K}^{K} \beta_{k,\text{non-profit}} \text{ Treated Non-profit}_{i,t-k} \times \text{Time to Non-profit Entry}_{it=k} + \eta_i + \gamma_t + \varepsilon_{it} \qquad (5)$$

The above specification are two-way fixed effect (TWFE) staggered difference-in-difference (DID) specification, as the timings of charter schools' entry differ across school districts. The average treatment effect in such specifications is the weighted sum of DID estimates for different group-time pairs. Recent methodological advancements indicate that in "settings with variation in treatment timing across units, the coefficient on a given lead or lag can be contaminated by effects from other periods, and apparent pre-trends can arise solely from treatment effects heterogeneity" (Sun and Abraham, 2021, p. 175). To address this concern, I also use Sun and Abraham (2021) interactions in the event study results and find consistent results.

Charter Schools & Demographic Shifts in Nearby TPS. To assess the impact of charter school entry on the percentage of economically disadvantaged and special needs students in nearby TPS (H2 and H3b), I leverage a quasi-natural experiment that occurs due to the typical model of entry of charter schools. Charter schools usually start by enrolling students in early grades and gradually expand to offer upper grades. This pattern offers an opportunity for a research design, where grades of a nearby TPS offered by the entering charter school constitute the treatment group. These can be compared with the grades *in the same TPS in the same year* not yet offered by the charter school, forming the control group. For example, if a newly opened charter school initially offers grades one and two, and a nearby traditional public school offers grades one to six, then in the first year after the charter school's entry, grades one and two in the nearby TPS would form the

treatment group, while grades three to six would be ideal counterfactuals for these treated grades. Figure 1 visualizes this empirical strategy.

*** Insert Figure 1 about here ***

To test the effect of charter schools on the percentage of economically disadvantaged and special needs students in nearby TPS, I estimate the following equations:

$$y_{git} = \beta_{charter} \text{School -Grade Expo. to Charters}_{git} + \delta X_{git} + \eta_{it} + \gamma_c + \theta_g + \epsilon_{igt} \quad (6)$$

$$y_{git} = \beta_{for-profit} \text{School -Grade Expo. to For-profits}_{git} +$$

$$\beta_{non-profit} \text{School -Grade Expo. to Non-profits}_{git} + \delta X_{git} + \eta_{it} + \gamma_c + \theta_g + \epsilon_{igt} \quad (7)$$

where y_{git} is either the percentage of economically disadvantaged or special needs students at the grade g of TPS i in year t. The main identification strategy comes from the inclusion of the school × year, η_{it}, fixed effects, which *limit comparisons to treated versus control grades of the same school in any given year*. I also include cohort fixed effect, γ_c, which is the estimated age of each student in each cohort in the year 2000, to control for the time-invariant unobserved heterogeneity that might be specific to one cohort - e.g., children born during an economic crisis might be on average different from students born during an economic growth period. I also include the grade fixed effects, θ_g, to control for any unobserved heterogeneity that may impact grades differently - e.g., a screening for special needs students in certain grades may increase the likelihood of identifying special needs students in those grades.

RESULTS

Charter Schools and Local Support for Nearby TPS

I begin by examining the relationship between the entry of charter schools and local support for traditional public schools (TPS) (H1 and H3a). The findings are detailed in Table 2

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and Figure 2. The results indicate that following the entry of the first charter school within a school district's boundaries, nearby TPS experience a decline of 1.4% ($p < 0.05$) in local support, measured as the per-pupil local revenues (see Model 5, Table 2). This effect is significantly larger for for-profit charter schools; following the entry of for-profit charter schools, nearby TPS experience a drop of 8.7% ($p < 0.001$) in local support, compared to an average drop of 1.3% ($p > 0.05$) following the entry of nonprofit charter schools (see Model 7, Table 2). A Wald test confirms that these coefficients are significantly different $\left(\chi^2 = 12, p < 0.001\right)$. A more conservative estimation that includes *state × year* fixed effects also show a similar pattern. I also find similar results using both the full sample and the matched sample obtained through propensity score matching. These results provide support for H1 and H3a. Accordingly, I find support that following the entry of for-profit charter schools there will be a drop-in local support for competing TPS. An effect that is almost fully mitigated in case of the entry of non-profit charter schools.

<center>*** Insert Table 2 & Figure 2 about here ***</center>

To further confirm the validity of the parallel pre-trend assumption, I conducted an event study comparing the effect of for-profit and nonprofit charter school entries on local support for nearby TPS by estimating equations (4) and (5). Accordingly, I confirm that the parallel pre-trend assumption holds for the full sample (see Figure 2a). I also present results showing an improved pre-trend assumption in the CEM matched sample (see Figure 2b). Thus, I conclude the validity of the conclusions regarding the effect sizes and the causal effect of charter school entry on per-pupil local revenues for nearby TPS. Furthermore, the event study confirms the significantly larger negative effect of for-profit charter schools on local revenue per pupil for nearby TPS, providing further evidence in support of H3a.

In a supplementary analysis, I also show that the drop in per-pupil local revenues following the entry of for-profit charter schools comes from a decline in the number of successful school referenda supporting the TPS district, as well as lowered voluntary fees, donations, and contributions paid to TPS. Overall, these findings uniformly support a negative impact of for-profit charter school entry on local support for nearby TPS, while also showing the comparative efficiency of non-profit charter schools in solving the social issue at hand. In forthcoming robustness tests, I will also demonstrate that these results hold when using an instrumental variable approach or synthetic controls, providing further evidence in support of a causal relationship between the entry of charter schools, particularly for-profit ones, and reduced local support for nearby TPS.

Charter Schools & Demographic Shifts in Nearby TPS

Next, I focus on testing the relationship between the entry of charter schools and demographic shifts in nearby traditional public schools (TPS). Particularly, I investigate the impact of a charter school's entry on the percentage of economically disadvantaged and special needs students in the treated grades of nearby TPS—those grades currently offered by the nearby charter school—compared to grades not yet offered by the charter school (H2 and H3b). The analysis results are presented in Table 3.

<center>*** Insert Table 3 about here ***</center>

Panel A shows results for the percentage of economically disadvantaged students. I find little evidence that TPS grades exposed to charter schools, on average, experience a significant increase in economically disadvantaged students compared to unexposed grades in the same school (Panel A, Models 1-3). However, this finding masks the effect of exposure to for-profit charter schools on the percentage of economically disadvantaged students in nearby TPS. Separating the impact of exposure to for-profit vs. nonprofit charter schools, I find that exposure to for-profit

<center>31</center>

charter schools results in an average increase of between 1.2 to 2.6 percentage point – i.e., between 2.4 to 5.2% – in economically disadvantaged students in treated grades of nearby TPS. This figure is statistically indifferent from zero for nonprofit charter schools. Wald tests comparing these coefficients confirm a significant difference in the impact of exposure to for-profit versus nonprofit charter schools $\left(\chi^2 = 10.2, p < 0.001\right)$ comparing coefficients in Model 6, Table 3). The event study shown in Figure 3, which compares treated and control grades within the same school in any given year over time, also provides further evidence in support of these findings. These results support H3b regarding the impact of for-profit charter schools leaving nearby TPS with more economically disadvantaged students. I find little support for nonprofit charter schools causing a similar effect.

Similar results are found for the impact of exposure to charter schools on the percentage of special needs students. Table 3, Panel B, details these findings. TPS grades exposed to charter schools (either for-profit or non-profit), on average, experience a 0.6 percentage point or about 4% increase in special needs students compared to unexposed grades (Panel B, Model 3). Again, comparing exposure to for-profit versus non-profit charter schools, I find the increase in special needs students in treated grades is predominantly driven by exposure to for-profit charter schools. Grades exposed to for-profit charter schools, on average, will see an increase of 1.5 percentage point or about 10% compared to unexposed grades. This figure is about 0.3 percentage point or about 2% for non-profit charter schools. A Wald test, in line with H3b, also confirms a significant difference in the impact of exposure to for-profit versus non-profit charter schools $\left(\chi^2 = 12.7, p < 0.001\right)$.

Before concluding that these results can be interpreted causally, it is important to verify that treated and control grades are comparable. To ensure this, I check if treated and control

grades were on the same trajectory before treated grades were exposed to charter schools (parallel pre-trend assumption). An event study comparing the percentage of economically disadvantaged and special needs students in grades exposed to for-profit versus non-profit charter schools supports this assumption. The findings, presented in Figure 3, confirm that treated and untreated grades were on a similar trajectory before the treatment and further validate that any increase in the percentage of economically disadvantaged and special needs students is a result of exposure to for-profit charter schools. Overall, these results provide strong support for the comparative efficiency of non-profit private organizations in settings where there is substantial heterogeneity in the profit potential of different customer segments and the service needs to be provided indiscriminately.

*** Insert Figure 3 about here ***

Supplementary Analyses

Charter Schools and Students Achievements. So far, my analysis has centered on assessing whether charter schools, particularly for-profit ones, leave nearby TPS worse off. This is considered in two key aspects: 1) lowering their per-pupil revenues by reducing local support, and 2) increasing their per-pupil costs by leaving more costly student segments for TPS to manage. While the findings provide strong support for these aspects, effectively suggesting negative spillovers on TPS, an important question remains: Do these mechanisms translate into diminished student achievements, which ultimately define the success or failure of a school?

*** Insert Table 4 about here ***

To investigate this question, I employ the Stanford Education Data Archive (SEDA), which offers a unique dataset of cohort-standardized student achievement at the school district-grade level. SEDA, as detailed by Fahle et al. (2021), provides data on the average achievement of students in

each school district-grade as part of their respective cohorts—defined as all students across the US who began their schooling in the same year—for both math and reading subjects. SEDA's method of reporting involves comparing student achievements within a given cohort to the national cohorts of all districts in the same grade for a particular year. This comparison is standardized, such that the national average is set to zero and the standard deviation is one. Consequently, a score of 0.01, for instance, implies that the average student achievement in a particular school district-grade is one percent above the mean of the corresponding national reference cohort. In my analysis, carried out at the district-cohort-subject level, I compare student achievements in math and reading within the same cohort of students from the same district, relative to the national average, before and after the entry of charter schools. This approach ensures that the comparison of student performance is consistent and attributable to the influence of charter school entry within that specific student cohort.

The results are presented in Table 4. I find that each additional charter school within a school district's boundaries is linked to a decrease of -0.1% in the combined math and reading achievement of nearby TPS students (Table 4, Model 5). This effect appears to be largely driven by the lower student achievements associated with the entry of for-profit charter schools—i.e., $\beta_{for-profit} = -0.008 \ (p < 0.001)$ compared to $\beta_{non-profit} = -0.000 \ (p > 0.1)$. A Wald test confirms a significant difference between these coefficients. This decline in achievements of students in nearby TPS could be attributed to either the profit-inclusion trade-off, which leaves behind lower-achieving students, or the reduced revenue impacting TPS quality of education, or a combination of both. Whichever is the explanation, this finding aligns with other results of this study. Another key insight from this analysis is the tangible impact of local revenues on TPS student achievements. The results suggest a significant positive relationship between per-pupil local funding and student achievements

in math and reading. Specifically, a one percent increase in per-pupil local revenue at the school district level is associated with 1.2%, ($p < 0.001$) improvement in TPS student achievements, thereby underscoring the importance of local support for students' success.

Unpacking Local Support: Donations, Fees, and School Tax Referenda in Support of TPS. Next, I focus on testing the mechanism through which the loss of local revenues for nearby TPS occurs. I consider two mechanisms through which local revenues are raised: 1) donations, tuitions, fees, and other locally raised funding that are directly paid to the schools, and 2) revenue raised through the approval of additional tax measures through school referenda, which indirectly raises money for the schools. As I explained earlier, school referenda are an important means through which communities raise additional funds for their local schools, either by issuing debt in the form of school bonds for capital investments (such as construction or the purchase of learning equipment) repayable through future property taxes, or by raising local taxes. These issues are proposed, campaigned for, and voted on by the entire community in local referenda, and a successful vote to issue a bond or to increase tax levies is thus a direct measure of a community's local support for investing in its schools. For example, in 2020, 177 school districts in California (out of a total of 977 school districts in California) held 212 school bond and tax levy elections. Of those, 112 elections (about 52%) were successful, raising a total of an additional $16,819,640,000 for students in those districts. Thus, a school district's failure to organize and secure votes for these referenda represents a significant loss of support for the school districts. In this analysis, I assess the impact of the entry of charter schools on both donations and fees as well as the likelihood of the focal school district to organize and vote for school referenda. The results are presented in Table 5. Accordingly, I find that the entry of charter schools, particularly for-profit charters, is associated with lowered donations and fees paid directly to the schools as well as

fewer referenda being organized and passed by the focal school district. These findings provide a direct test of mechanisms behind the loss of local support for TPS following charter school entry which are consistent with the finding that for-profit charter schools are likely to focus on non-economically disadvantaged customer segments.

<div align="center">*** Insert Table 5 about here ***</div>

Safeguarding Against Exclusionary Practices. Prior research suggests that "the outcomes of privatization crucially depend on the existence of strong public action to enforce high standards" (original sentence was in past tense, Lazzarini, 2022). Thus, it is important to investigate whether the exclusionary behaviors of for-profit charter schools can be mitigated in the presence of strong public action aimed at safeguarding against such practices. Accordingly, I conduct an analysis to compare the negative spillovers of charter schools documented in this study between 19 states whose statutes safeguard against exclusionary behaviors and 26 remaining states whose statutes do not provide such safeguards. To give an example of such safeguards, in New York charter schools "shall attract and retain a comparable or greater enrollment of students with disabilities, English language learners, and students who are eligible applicants for the free and reduced price lunch program when compared to the enrollment figures for such students in the school district in which the charter school is located" (The New York State Senate, 2023). The requirements in the statutes of the 19 states are presented in Appendix B. My analysis finds that the negative spillovers documented in this study primarily come from for-profit charter schools operating in states without sufficient safeguards against exclusionary behaviors. I find that the cherry-picking behavior of for-profit charter schools is mitigated in states with such safeguarding measures. Furthermore, the negative spillovers of for-profit charter schools on local revenues are mitigated in

those states, providing further evidence of the link between exclusionary behaviors and the loss of resources for TPS. The results of this analysis are presented in Table 6.

*** Insert Table 6 about here ***

The Link between Exclusionary Behaviors and Loss of Local Support. When theorizing about the greater downsides of for-profit private solutions to social issues, I argued that these solutions undermine local support by attracting a disproportionately large segment of economically viable customers with a higher willingness to support public providers. I contended that if those stakeholders most capable of organizing local problem-solving efforts—such as local referenda—in support of existing public providers leave the public provider, the resulting loss of support and revenues for the public provider would be greater. If this mechanism is correct, it implies that in places where the private provider does not cherry-pick, we should not see a loss of local support for the public provider. To test this argument, I compared the effect of charter schools' entry on local support for TPS in districts where the new entrant charter school serves a larger segment of economically disadvantaged students (non-cherry-picking case) to those districts where the new entrant charter school focuses on serving non-economically disadvantaged students (cherry-picking case). I did so by splitting the sample based on the estimated cherry-picking from the analysis of hypothesis 2. I find that in districts where the charter school does not cherry-pick students, the negative effect of charter school entry on local support for the public provider is fully mitigated. The results of this analysis are reported in Table 7. These findings provide further evidence of the link between exclusionary behaviors and the loss of resources for TPS.

*** Insert Table 7 about here ***

Charter Schools and Total Revenues. One may argue that the focus on local school spending, despite being relevant to the proposed theory, may be too narrow, particularly if the entry of for-profit charter schools is associated with increased support from state and federal governments. To address this concern, I test whether the reduced local support is also reflected in per-pupil total revenues. Appendix C shows the results of this analysis. Accordingly, I find that the negative spillover of for-profit charter schools on TPS revenues is also reflected in per-pupil total spending, thus providing support that the negative spillover on local support for TPS is not compensated for by state or federal governments.

Robustness Tests

Charter Schools & Local Support for Nearby TPS – An Instrumental Variable Approach.

As a robustness test, I employ an instrumental variable approach to correct for the endogeneity of charter school location. Given that I want to instrument for both for-profit and non-profit charter school locations, I use two instrumental variables. The first instrumental variable is the number of religious organizations within the school district boundaries. This choice is based on the observation that charter schools sometimes use facilities owned by religious organizations to save on operational costs (NAPCS, 2015, 2015), making the number of religious organizations a relevant instrument[11]. Additionally, I argue that this instrument satisfies the exclusion restriction criterion, as it seems unlikely that the number of religious organizations in a school district would impact the per pupil local revenues for TPS.

The second instrumental variable is the number of toxic-releasing facilities multiplied by their environmental risk factor within the school district as reported by the Environmental

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[11] While charter schools are public and must adhere to the separation of church and state, they are not affiliated with these religious organizations but rather utilize their spaces during weekdays at an affordable cost.

Protection Agency (EPA). The logic of this choice stems from the Energy Independence and

Security Act (EISA) mandate, which required the U.S. Environmental Protection Agency (EPA) to

develop guidelines for siting school facilities, focused on reducing children's exposure to

hazardous substances or pollution, considering their special vulnerabilities (EPA, 2011). These

guidelines recommend locating schools, including charter schools, away from toxic-releasing

facilities. Consequently, a higher number of such facilities in a district is expected to decrease the

likelihood of charter schools entering the area. Regarding the exclusion restriction criterion, one

concern might be the potential impact of these facilities on local revenues through property

values. However, prior research finds that "house prices show no significant impact of declines in

reported toxic releases over time" (Bui and Mayer, 2003, p. 693), thus mitigating concerns about

the violation of exclusion restriction criterion. The results of the analysis are presented in Table 8.

Accordingly, I find that the two instruments are indeed relevant - i.e., charter schools move

towards religious organizations and away from toxic-releasing facilities with high environmental

risk. I also find consistent results for the effect of charter school entry on local support for nearby

TPS especially when compared to my DID analysis. Consistent with the DID analysis, I also find

that these effects are primarily driven by the entry of for-profit charter schools. These findings

increase our confidence that the reduced local support for nearby TPS following the entry of

charter schools, particularly for-profit ones, can be interpreted as causal.

<center>*** Insert Table 8 about here ***</center>

Charter Schools & Local Support for Nearby TPS – A Synthetic Control Approach.

In another robustness test, I employ generalized synthetic controls (Xu, 2017). This method

has the advantage of averaging across multiple treated units, unlike the canonical synthetic control

method (Abadie et al., 2010), which constructs a counterfactual for only one treated unit. To select

the optimal number of factors for constructing the synthetic counterfactual, I use cross-validation. To estimate uncertainty intervals, I employ a non-parametric bootstrap procedure with 500 runs. Additionally, I incorporate time-varying district-level control variables as well as district and year fixed effects into the synthetic control models. The results are presented in Figure 5. These findings show effect sizes very similar to those from my original Difference in Differences (DID) analysis, which further increases confidence in the causal impact and the estimated effect sizes of for-profit and non-profit charter schools on per-pupil local revenues.

*** Insert Figure 5 about here ***

Charter Schools & Demographic Shifts in Nearby TPS – Alternative Measures. In my main analysis, I tested for the effect of the effect of charter schools on economically disadvantaged and special needs students using EDFacts data which is limited to grades three to nine. To address this limitation, I conduct a robustness test using an alternative measure that is available for all school grades: the racial composition of students. The intuition is that if charter schools are leaving economically disadvantaged students behind for TPS to serve, there would be an uptick in the percentage of historically economically disadvantaged racial groups (Black and Hispanic students) and a decrease in more economically advantaged groups (White and Asian students) when comparing school-grades exposed to charter schools to those that are not in nearby TPS. The results in Table 7 support this, showing that charter school exposure, particularly from for-profit charters, results in an increase in the percentage of Black and Hispanic students and a decrease in White and Asian students, aligning with the H2 and H3b hypotheses. The finding also aligns with recent research on charter schools and racial segregation in the US public education (Monarrez et al., 2022).

*** Insert Table 9 about here ***

DISCUSSION AND CONCLUSIONS

With the rising interest in private solutions to social problems (Ferraro et al., 2015; George et al., 2016, 2024; Etzion et al., 2017), it becomes crucial to ask: Are private solutions to social issues inclusive? Do they serve vulnerable populations? And what impacts do they have on non-recipients? The answers to these questions broaden our inquiry beyond the direct impacts of these private solutions on recipients to include *who they serve* and *whether they leave anyone else worse off.* These considerations are vital because private solutions to social issues frequently operate alongside public entities like local, state, and national governments trying to solve the same social issues. Given that public solutions to social issues are unlikely to be completely replaced by private solutions in the near future, it is increasingly important to understand if the introduction of a private solution could diminish the effectiveness of, or crowd out, existing public solutions (Ostrom, 2005; Kaul et al., 2019; Luo and Kaul, 2019), potentially leaving those who are left out of the private provision worse off than if no private solutions were offered.

In this research, I sought to understand the above concerns in the context of US public education, where private solutions, provided by charter schools, exist alongside TPS. I hypothesized and provided empirical evidence that the introduction of charter schools, particularly for-profit ones, lowers local support for existing TPS, leading to decreased revenues for TPS. Moreover, because for-profit private organizations have incentives to maximize profit, they tend to focus on more economically viable consumer segments. In the context of public education, this implies that private solutions to social issues may exclude special needs or economically disadvantaged students to maximize profits, consequently leaving these vulnerable segments for TPS to serve, while also leaving TPS with fewer resources to serve these vulnerable populations. I also show that the entry of for-profit charter schools is associated with lower

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student achievement in nearby TPS, which is consistent with the redistribution of students between for-profit charter schools and TPS such that the more difficult-to-serve students are left for TPS to serve. I demonstrated that the negative spillovers on public providers documented in this study are mitigated if private solution providers are organized as non-profit entities or if strong government safeguards are in place to prevent the exclusionary behaviors of for-profit private solution providers. These findings confirm the comparative efficiency of non-profit solutions over for-profit ones in addressing important social issues such as the provision of public education, particularly in situations where there is substantial heterogeneity in the profit potential of recipients and services must be provided indiscriminately to all individuals, regardless of their abilities or backgrounds.

The findings of this research have implications for several streams of strategic management and organizational research. First, I contribute to the growing body of literature on private solutions to social issues, such as private-public partnerships (Lazzarini, 2020, 2022; George et al., 2024) and corporate social responsibility (Kaul et al., 2019), by bringing increased attention to the importance of assessing the impact that private solutions have not only on direct recipients but also on those who are left out, as well as the competitive impacts of private solutions on competing providers in settings where different organizational forms offer competing solutions to a social issue. I also contribute to the comparative governance literature by demonstrating the comparative efficiency of non-profit private solutions in situations where a service must be provided indiscriminately. Additionally, I contribute to the growing body of research on grand societal challenges in management by studying the impact of private solutions in the education sector, which is significant for sustainability efforts of the UN SDGs. Additionally, these findings also have important implications regarding the UN 2030 Agenda for Sustainable Development by showing that for-profit private solutions to grand societal challenges, especially in the absence of

proper safeguards, may become exclusive in nature, contradicting the underlying principles of the UN's agenda to "*leave no one behind*" and "*to reach the furthest behind first*" (United Nations, 2018).

The boundary conditions of this research are situations where private and public solutions coexist alongside one another. It is not clear what the impact of private solutions would be in other settings, for example, if for-profit and non-profit private solutions were to compete. Moreover, it did not explore the differential impact that private solutions might have on different groups who continue using public solutions. For instance, it remains unknown whether the lowered effectiveness of public solutions would equally affect special needs and non-special needs students, or those from economically advantaged versus economically disadvantaged backgrounds who continue to attend traditional public schools. Future research may seek to address these limitations.

TABLE 1

Summary Statistics

District Level Data	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
(1) Local Rev Per Pupil (log)	8.63	0.71	0.00	11.78	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(2) Non-local Rev Per Pupil (log)	8.89	0.46	0.00	11.68	-.42	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(3) Num. Non-profit Charters	0.34	2.94	0.00	301.00	-.02	.01	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.
(4) Num. For-profit Charters	0.06	0.87	0.00	59.00	-.01	.00	.38	1	.	.	.	.	.	.	.	.	.	.	.	.	.
(5) Treated For-profit	0.03	0.16	0.00	1.00	-.03	.00	.31	.41	1	.	.	.	.	.	.	.	.	.	.	.	.
(6) Treated Non-profit	0.14	0.34	0.00	1.00	-.09	-.01	.30	.14	.29	1	.	.	.	.	.	.	.	.	.	.	.
(7) Enrollment (log)	7.16	1.40	1.10	13.44	-.12	-.14	.23	.14	.25	.41	1	.	.	.	.	.	.	.	.	.	.
(8) English Learners (%)	0.05	0.09	0.00	1.00	-.16	.09	.09	.03	.06	.18	.17	1	.	.	.	.	.	.	.	.	.
(9) Special Education (%)	0.14	0.05	0.00	1.00	.10	.17	-.01	.01	.00	-.06	-.06	-.19	1	.	.	.	.	.	.	.	.
(10) Poverty Rate (%)	0.18	0.10	0.00	1.00	-.46	.34	.06	.06	.06	.08	-.06	.23	-.00	1	.	.	.	.	.	.	.
(11) Median Income (log)	10.34	0.29	7.89	11.74	.52	-.36	-.01	-.02	-.01	-.03	.15	-.12	-.03	-.73	1	.	.	.	.	.	.
(12) Cost of Living Index	0.99	0.39	0.08	4.34	.39	-.29	.06	.02	.05	.13	.32	.16	-.08	-.43	.64	1	.	.	.	.	.
(13) Racial Diversity	0.27	0.20	0.00	0.76	-.01	-.06	.12	.07	.14	.26	.35	.32	-.10	.13	.05	.31	1	.	.	.	.
(14) Num. Referenda Passed (Past 4 years)	0.33	0.57	0.00	4.00	-.02	.03	.04	.01	.02	.09	.12	.07	-.08	-.07	.08	.06	.06	1	.	.	.
(15) Per Pupil Amount Referenda Passed (Past 4 years)	713.23	4232.69	0.00	572916.67	.07	-.03	.00	-.00	-.00	.02	-.01	.02	-.08	-.01	.03	.04	.05	.27	1	.	.
(16) IV: Num. Religious Orgs.	63.08	139.32	0.00	7093.50	-.06	-.03	.70	.45	.37	.32	.47	.10	-.05	.09	-.02	.08	.23	.05	.01	1	.
(17) IV: Environmental Risk (log)	6.73	8.47	0.00	28.85	-.04	-.06	.12	.08	.14	.23	.50	.04	.01	.03	-.03	-.00	.18	.03	-.01	.29	1

School-Grade Level Data	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Econ. Disadvantaged Students (%)	0.53	0.27	0.00	1.00	1	.	.	.	.	.	.	.	.	.
(2) Students with Special Needs (%)	0.15	0.12	0.00	1.00	.17	1	.	.	.	.	.	.	.	.
(3) Black and Hispanic Students (%)	0.19	0.28	0.00	1.00	.43	.06	1	.	.	.	.	.	.	.
(4) White and Asian Students (%)	0.60	0.35	0.00	1.00	-.62	-.02	-.61	1	.	.	.	.	.	.
(5) School-Grade Exposure to Charters	0.31	0.46	0.00	1.00	.23	.03	.29	-.38	1	.	.	.	.	.
(7) School-Grade Exposure to Non-profit Charters	0.30	0.46	0.00	1.00	.23	.02	.29	-.38	.97	1	.	.	.	.
(6) School-Grade Exposure to For-profit Charters	0.11	0.31	0.00	1.00	.18	.04	.28	-.28	.53	.46	1	.	.	.
(9) School-Grade Enrollment	91.45	103.69	0.00	800.00	-.14	-.20	.03	-.05	.08	.08	.04	1	.	.
(10) Num. TPS in District Offering Grade	37.66	102.41	1.00	877.00	.18	.02	.21	-.28	.39	.40	.47	-.01	1	.
(11) Num. Private Schools in District Offering Grade	5.57	35.51	0.00	578.00	.12	.01	.12	-.14	.20	.20	.29	.02	.50	1

FIGURE 1

Identification Strategy to Assess the Impact of Charter Schools on

Demographic Shifts in Nearby TPS

Grades Not Offered

Grades Offered

Control Grades

Treated Grades

Charter School

Nearby TPS

FIGURE 2

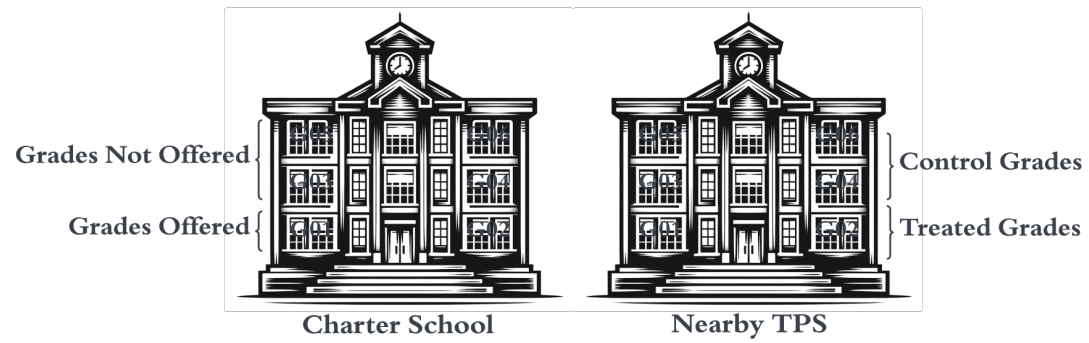## Charter Schools and Local Support for Nearby TPS

Figure 2a: Charters Schools & Local Support for Nearby TPS (Full Sample)
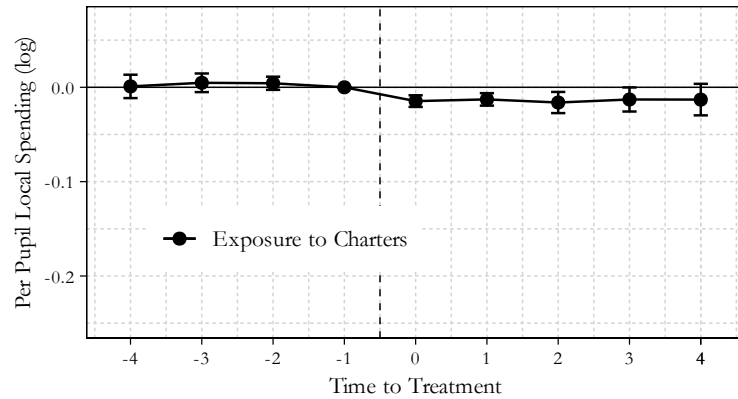

Figure 2b: Charters Schools & Local Support for Nearby TPS (CEM Sample)
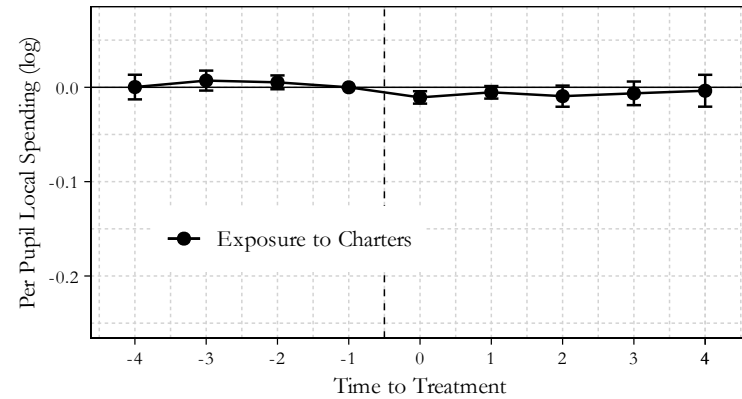

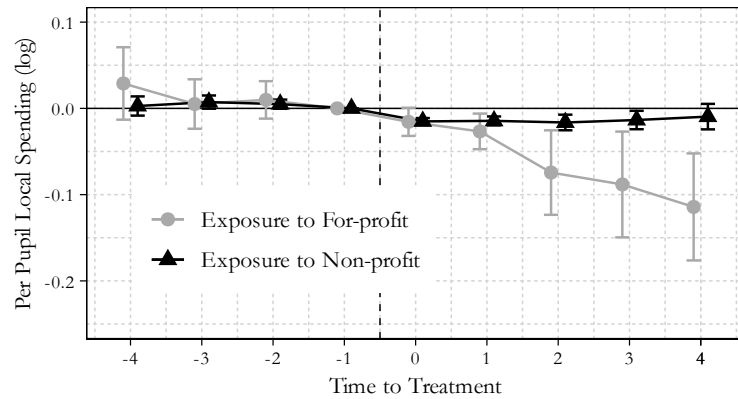**Figure 2c: For-profit vs. Non-profit Charters & Local Support for Nearby TPS (Full Sample)**

Figure 2d: For-profit vs. Non-profit Charters & Local Support for Nearby TPS (CEM Sample)
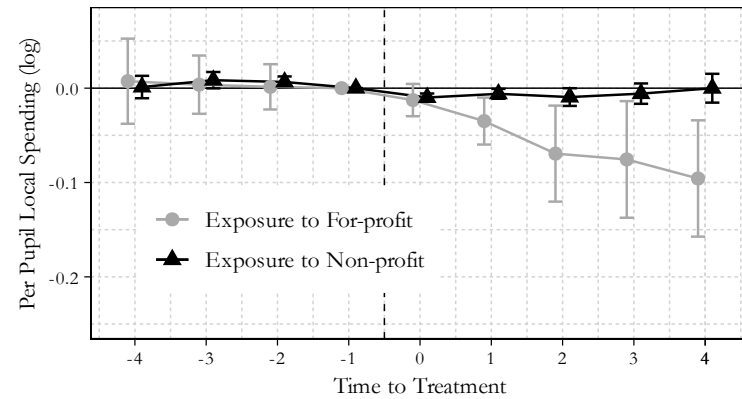
TABLE 2

Charter Schools and Local Support for Traditional Public Schools

	Full Sample				CEM Sample				PSM Sample			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Charter x Post	-0.021**	-0.003			-0.014*	-0.001			-0.013*	-0.002		
	(0.007)	(0.006)			(0.007)	(0.006)			(0.007)	(0.006)		
For-profit Charter x Post			-0.074***	-0.031*			-0.087***	-0.042**			-0.066***	-0.028*
			(0.016)	(0.012)			(0.020)	(0.014)			(0.016)	(0.012)
Non-profit Charter x Post			-0.021**	-0.004			-0.013+	0.001			-0.014*	-0.002
			(0.007)	(0.006)			(0.007)	(0.006)			(0.007)	(0.006)
Non-Local Revenue Per Pupil (log)	-0.063***	-0.062***	-0.063***	-0.062***	-0.058***	-0.059***	-0.058***	-0.059***	-0.057***	-0.067***	-0.058***	-0.067***
	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)
Household Income Gini	0.000	0.000	0.000	0.000	0.003+	0.003	0.003+	0.003	0.002	0.001	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Adults without College Degree (%)	-0.007	-0.012**	-0.007	-0.012**	-0.015**	-0.019***	-0.015**	-0.019***	-0.016*	-0.027***	-0.016*	-0.027***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.004)	(0.005)	(0.004)	(0.006)	(0.006)	(0.006)	(0.006)
Cost of Living	0.021***	0.014***	0.021***	0.014***	0.022***	0.013***	0.023***	0.013***	0.029***	0.017***	0.029***	0.017***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)
Racial Diversity	-0.014*	-0.001	-0.014*	-0.001	-0.015*	0.002	-0.015*	0.002	-0.027***	-0.003	-0.027***	-0.003
	(0.006)	(0.005)	(0.006)	(0.005)	(0.007)	(0.006)	(0.007)	(0.006)	(0.007)	(0.007)	(0.007)	(0.007)
Poverty Rate (%)	-0.020***	-0.014***	-0.020***	-0.014***	-0.026***	-0.019***	-0.026***	-0.019***	-0.028***	-0.020***	-0.028***	-0.020***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)
Special Education Programs (%)	0.011***	0.006***	0.011***	0.006***	0.014***	0.007***	0.014***	0.007***	0.012***	0.006***	0.012***	0.006***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
English Learning Programs (%)	0.002	0.005	0.002	0.005	-0.003	-0.002	-0.003	-0.002	-0.003	0.000	-0.003	0.000
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Median Property Price	0.070***	0.044***	0.070***	0.044***	0.077***	0.054***	0.077***	0.054***	0.083***	0.048***	0.083***	0.048***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.006)	(0.005)	(0.006)	(0.006)	(0.006)	(0.006)
Voted Democrat	0.010***	-0.002	0.010***	-0.001	0.009**	-0.003	0.009**	-0.003	0.006+	-0.007**	0.006*	-0.007**
	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Num.Obs.	142548	142548	142548	142548	102372	102372	102372	102372	90250	90250	90250	90250
R2	0.955	0.962	0.955	0.962	0.955	0.964	0.955	0.964	0.960	0.967	0.960	0.967
District Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
State x Year Fixed Effect		Yes		Yes		Yes		Yes		Yes		Yes
Year Fixed Effect	Yes		Yes		Yes		Yes		Yes		Yes	

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001

TABLE 3

Charter Schools and Profit-Inclusion Trade-off

	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Dependent Variable: Econ. Disadvantaged Students						
School-Grade Exposure to Charters	0.006**	0.004*	0.001			
	(0.002)	(0.002)	(0.002)			
School-Grade Exposure to For-profit Charters				0.026***	0.019***	0.012**
				(0.004)	(0.004)	(0.004)
School-Grade Exposure to Non-profit Charters				0.003+	0.001	-0.002
				(0.002)	(0.002)	(0.002)
School-Grade Enrollment	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. TPS in District Offering Grade	0.000	-0.000***	-0.000***	0.000	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. Private Schools in District Offering Grade	0.001***	0.001***	0.000**	0.001***	0.001***	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. Magnet in District Offering Grade	-0.001	-0.002**	-0.002**	-0.001+	-0.002**	-0.002**
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Num.Obs.	2169964	2169964	2169964	2169964	2169964	2169964
R2	0.936	0.937	0.937	0.936	0.937	0.937
School x Year	Yes	Yes	Yes	Yes	Yes	Yes
Cohort	No	Yes	Yes	No	Yes	Yes
Grade	No	No	Yes	No	No	Yes
Panel B: Dependent Variable: Students with Disabilities						
School-Grade Exposure to Charters	0.007***	0.007***	0.006***			
	(0.002)	(0.002)	(0.002)			
School-Grade Exposure to For-profit Charters				0.018***	0.018***	0.015***
				(0.003)	(0.003)	(0.003)
School-Grade Exposure to Non-profit Charters				0.005**	0.004**	0.003*
				(0.002)	(0.002)	(0.002)
School-Grade Enrollment	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. TPS in District Offering Grade	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***	-0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. Private Schools in District Offering Grade	0.000	0.000	-0.000	0.000	0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. Magnet in District Offering Grade	-0.001+	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num.Obs.	2217165	2217165	2217165	2217165	2217165	2217165
R2	0.794	0.794	0.795	0.794	0.794	0.795
School x Year	Yes	Yes	Yes	Yes	Yes	Yes
Cohort	No	Yes	Yes	No	Yes	Yes
Grade	No	No	Yes	No	No	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Clustered robust standard errors clustered at the school district level x year level are shown in parentheses

FIGURE 3

Charter Schools and Profit-Inclusion Trade-off

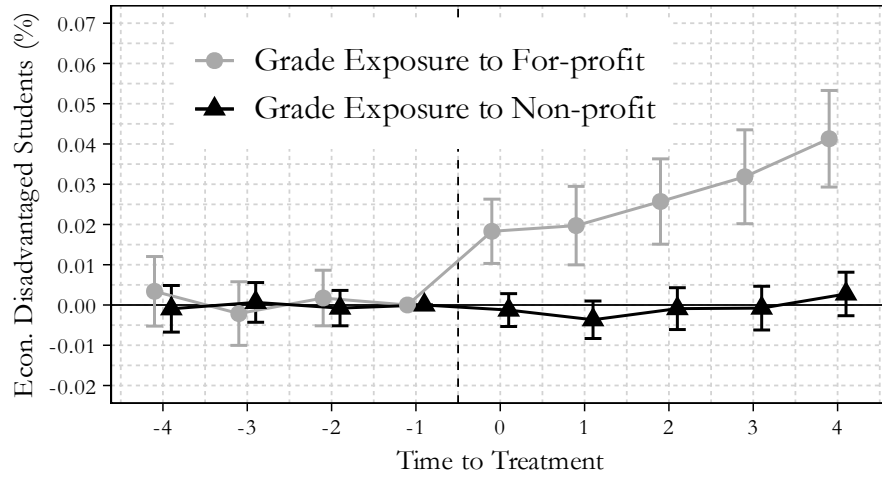**Figure 3a: Charter Schools & Percentage of Econ. Disadvantaged Students in Nearby TPS**

Figure 3b: Charter Schools & Percentage of Special Needs Students in Nearby TPS
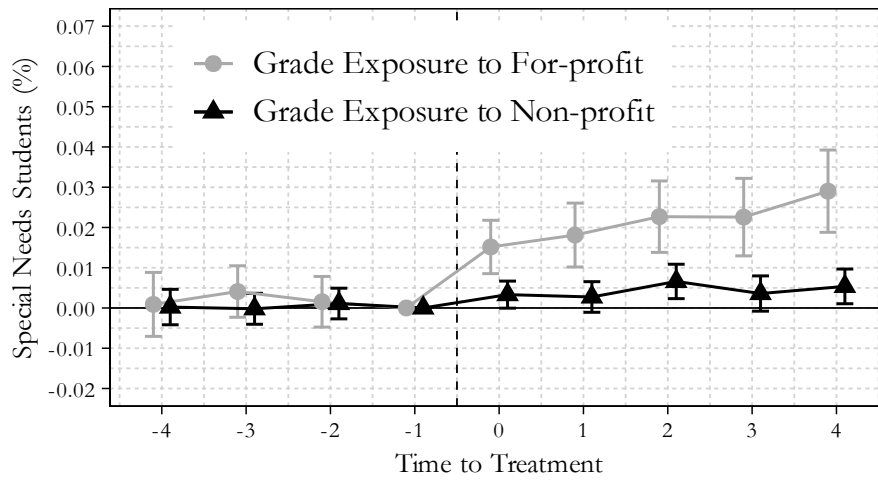
TABLE 4

Charter Schools and Nearby Public Schools Students Achievements

	Math		Reading		Math & Reading	
	(1)	(2)	(3)	(4)	(5)	(6)
Num. Charters	-0.002***		0.000		-0.001*	
	(0.001)		(0.001)		(0.000)	
Num. For-profit Charters		-0.008***		-0.007***		-0.008***
		(0.002)		(0.002)		(0.001)
Num. Non-profit Charters		-0.002*		0.001*		-0.000
		(0.001)		(0.001)		(0.000)
Local Rev PP (log)	0.017***	0.017***	0.008**	0.008**	0.012***	0.012***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Non-local Rev PP (log)	0.029***	0.029***	0.022***	0.022***	0.025***	0.025***
	(0.004)	(0.004)	(0.003)	(0.003)	(0.002)	(0.002)
Enrollment (log)	0.051***	0.051***	0.040***	0.040***	0.046***	0.046***
	(0.010)	(0.010)	(0.008)	(0.008)	(0.006)	(0.006)
English Learners (%)	-0.160***	-0.159***	-0.335***	-0.335***	-0.251***	-0.250***
	(0.034)	(0.034)	(0.026)	(0.026)	(0.021)	(0.021)
Special Education (%)	0.007	0.007	0.129***	0.129***	0.069**	0.069**
	(0.034)	(0.034)	(0.027)	(0.027)	(0.022)	(0.022)
Poverty Rate (%)	-0.021	-0.021	-0.081***	-0.081***	-0.053***	-0.053***
	(0.017)	(0.017)	(0.013)	(0.013)	(0.010)	(0.010)
Median Income (log)	0.032***	0.032***	0.026***	0.026***	0.029***	0.029***
	(0.009)	(0.009)	(0.008)	(0.008)	(0.006)	(0.006)
Racial Diversity	-0.033	-0.033	-0.138***	-0.138***	-0.090***	-0.091***
	(0.024)	(0.024)	(0.019)	(0.019)	(0.015)	(0.015)
Num.Obs.	467956	467956	492805	492805	960761	960761
R2	0.858	0.858	0.882	0.882	0.869	0.869
District x Cohort x Subject	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Clustered robust standard errors clustered at the school district level are shown in parentheses.

TABLE 5

Donations, Fees, and Successful School Referenda

	Full Sample		CEM Sample		PS Sample	
	DV: Donations & Fees	*DV: Successful Referenda*	*DV: Donations & Fees*	*DV: Successful Referenda*	*DV: Donations & Fees*	*DV: Successful Referenda*
Num. For-profit Charters	-0.034***	-0.034***	-0.053*	-0.048**	-0.032***	-0.030***
	(0.006)	(0.004)	(0.021)	(0.013)	(0.006)	(0.007)
Num. Non-profit Charters	-0.001	-0.005+	-0.008	0.000	0.000	-0.005*
	(0.002)	(0.002)	(0.005)	(0.006)	(0.002)	(0.002)
Num.Obs.	142548	58874	103174	41252	90948	39014
R2	0.733	0.399	0.749	0.386	0.756	0.392
Controls	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, 1) Clustered robust standard errors clustered at the school district level are shown in parentheses, 2) The same control variables as in Table 2 are included in all models.

TABLE 6

Safeguarding Against Exclusionary Behaviors

	Does the Statute Safeguard Against Exclusion?			
	No		**Yes**	
Panel A: Dependent Variable: Local Revenue Per Pupil				
For-profit Charter x Post	-0.094***	-0.063***	-0.042+	0.011
	(0.022)	(0.018)	(0.024)	(0.014)
Non-profit Charter x Post	-0.041***	-0.017	0.004	0.009
	(0.012)	(0.010)	(0.008)	(0.006)
Num.Obs.	80902	80902	61646	61646
R2	0.957	0.964	0.954	0.959
District Fixed Effect	Yes	Yes	Yes	Yes
State x Year Fixed Effect		Yes		Yes
Year Fixed Effect	Yes		Yes	
Panel B: Dependent Variable: Econ. Disadvantaged Students				
School-Grade Exposure to For-profit Charters	0.033***	0.016***	0.016*	0.006
	(0.005)	(0.004)	(0.007)	(0.007)
School-Grade Exposure to Non-profit Charters	0.003	-0.004	0.003	0.001
	(0.003)	(0.003)	(0.002)	(0.002)
Num.Obs.	1309572	1309572	860392	860392
R2	0.933	0.934	0.942	0.943
School x Year Fixed Effects	Yes	Yes	Yes	Yes
Cohort Fixed Effects		Yes		Yes
Grade Fixed Effects		Yes		Yes

+ $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$, Notes: 1) Robust standard errors clustered at the school district level are shown in parentheses, 2) The same control variables as in Table 2 are included in all models.

TABLE 7

The Interplay between the Profit-Inclusion Trade-off and Local Support for TPS

	Charter Enrolls a *Large Share* Economically Disadvantage students	Charter Enrolls a *Small Share* Economically Disadvantage students	Charter Enrolls a *Large Share* Special Needs Students	Charter Enrolls a *Small Share* Special Needs students
	(1)	(2)	(3)	(4)
All Charter x Post	-0.004	-0.032***	-0.001	-0.031***
	(0.009)	(0.009)	(0.010)	(0.008)
Num.Obs.	126490	126827	125809	127580
R2	0.956	0.956	0.956	0.956
District Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, + p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Clustered robust standard errors clustered at the school district level are shown in parentheses, 2) The same control variables as in Table 2 are included in all models.

TABLE 8

Robustness Test: Charter Schools and Local Support for TPS – IV Approach

	OLS	1st Stage DV: Num. For-profits	1st Stage DV: Num. Non-profits	2SLS
	(1)	(2)	(3)	(4)
Num. For-profit Charters	-0.015***			-0.083**
	(0.002)			(0.025)
Num. Non-profit Charters	0.000			-0.002
	(0.001)			(0.025)
Environmental Risk		-0.003+	-0.020***	
		(0.002)	(0.006)	
Num. Religious Orgs.		0.345***	-0.095	
		(0.104)	(0.323)	
Num.Obs.	142548	142285	142285	142285
R2	0.955	0.944	0.953	0.955
District Fixed Effect	Yes	Yes	Yes	Yes
Year Fixed Effect	Yes	Yes	Yes	Yes
Cragg-Donald Wald F statistic		2467	53.4	2467

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Clustered robust standard errors clustered at the school district level are shown in parentheses, 2) The same control variables as in Table 2 are included in all models.

FIGURE 5

Robustness Test: Charter Schools and Local Support for TPS – Synthetic Controls

Figure 4a: Non-Profit Charter Schools & Local Revenue Per Pupil
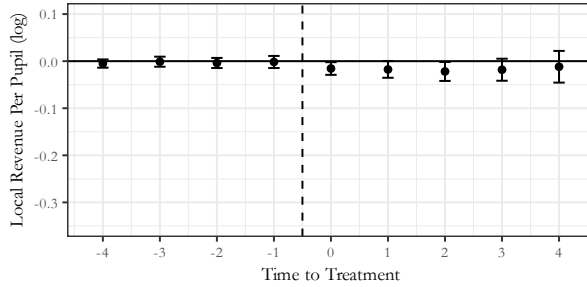

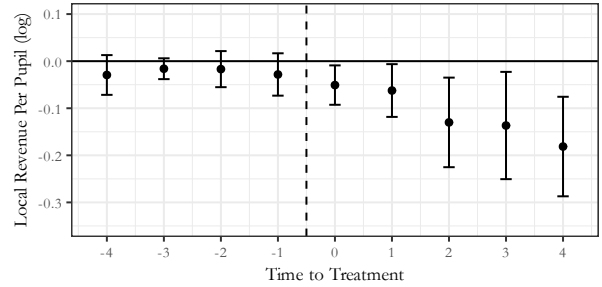**Figure 4b: For-Profit Charter Schools & Local Revenue Per Pupil**

TABLE 9

Robustness Test: Charters Schools and Nearby TPS Racial Makeup

	White & Asian			Black & Hispanic		
	(1)	(2)	(3)	(4)	(5)	(6)
School-Grade Exposure to For-profit Charters	-0.017***	-0.017***	-0.017***	0.014***	0.010***	0.010***
	(0.004)	(0.004)	(0.004)	(0.003)	(0.003)	(0.003)
School-Grade Exposure to Non-profit Charters	-0.002	-0.001	-0.001	0.006***	0.002+	0.002+
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
School-Grade Enrollment	0.000	0.000	0.000	0.000	-0.000*	-0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num. TPS in District Offering Grade	0.000	0.000***	0.000***	-0.000***	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Num.Obs.	4247529	4247529	4247529	4247529	4247529	4247529
R2	0.945	0.946	0.946	0.952	0.952	0.952
School x Year	Yes	Yes	Yes	Yes	Yes	Yes
Cohort	No	Yes	Yes	No	Yes	Yes
State x Year	No	No	Yes	No	No	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Clustered robust standard errors clustered at the school district level x year level are shown in parentheses

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ONLINE APPENDICES

Appendix A: The Location Choice of Charter Schools

Charter schools do choose their entry locations strategically. Understanding these location choices are not only important to correct for selection in empirical models, but also are important theoretically to understand if the location choice of charter schools (both for-profit and non-profit) is consistent with the theoretical mechanisms discussed in this paper particularly the profit inclusion-trade off. To this end, I conduct a set of between-district analysis to understand where charter school are more likely to entry controlling for the state and year. Accordingly, charter schools are more likely establish themselves in regions characterized by 1) high income inequality, 2) elevated poverty levels, 3) high levels of racial diversity, 4) high levels of racial education gap measured as the difference in the percentage of adults with bachelors between White and Asian (i.e., two less educated racial groups in the US) and Back and Hispanic (i.e., two less educated racial groups in the US). These patterns indicate that charter schools are positioning themselves in communities where underlying *social inequalities* are stark.

Comparing the location choice of for-profit vs. non-profit charter schools, for-profit charter schools not only follow the aforementioned socio-economic and demographic patterns but also show a stronger propensity to enter areas with higher wealth, as indicated by higher median property values while I find no such association for non-profit charter schools' entry which is consistent with the non-profit nature of these organizing. The propensity to enter locations with high levels of social inequalities and higher levels of wealth particularly for for-profit charter schools aligns with the arguments of this research on the exclusive nature of privately provided public solutions, such as charter schools, as these schools may be seeking to capitalize on market segments where existing inequalities can be leveraged for profit.

Additionally, charter schools are significantly more likely to enter urban areas compared to rural ones. This urban preference suggests that the existing demand for alternative educational options is higher in metropolitan regions, where population density and diversity create a more robust market for charter schools. Conversely, the lower likelihood of charter schools entering rural areas indicates that these regions may not present the same level of demand or economic opportunity for charter school operators.

TABLE A.1

Charter Schools Location Choice

	Num. Charters	Num. Non-Profits	Num. For-Profits
	(1)	(2)	(3)
Household Income Gini	0.212***	0.069**	0.223***
	(0.007)	(0.022)	(0.008)
Racial Diversity	0.207***	0.349***	0.182***
	(0.006)	(0.017)	(0.006)
Racial Education Gap	0.313***	0.148***	0.342***
	(0.010)	(0.030)	(0.010)
Poverty Rate (%)	0.422***	0.539***	0.396***
	(0.008)	(0.026)	(0.009)
Median Property Value (log)	0.043***	-0.004	0.056***
	(0.011)	(0.037)	(0.012)
Special Education Programs (%)	0.082***	0.022	0.089***
	(0.008)	(0.023)	(0.008)
English Learning Programs (%)	-0.125***	-0.094***	-0.127***
	(0.006)	(0.018)	(0.006)
District Enrolment (log)	1.446***	1.726***	1.416***
	(0.006)	(0.018)	(0.006)
Suburb	-0.207***	0.092**	-0.264***
	(0.013)	(0.034)	(0.014)
Town	-0.162***	-1.012***	-0.092***
	(0.019)	(0.083)	(0.019)
Rural	-0.326***	-0.774***	-0.271***
	(0.020)	(0.072)	(0.021)
Num.Obs.	141887	141887	141887
District Fixed Effect	No	No	No
Year Fixed Effect	Yes	Yes	Yes

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001 Notes: 1) Models are between district models consistent with the location choice analysis, 2) Robust standard errors clustered at the school district level are shown in parentheses.

Appendix B: States with Statutes Safeguarding Against Exclusion

State	Descriptions of Statute	Sources
California	Authorizers must consider and make written finding that the school will achieve a racial and ethnic balance reflective of community prior to approval/renewal.	Cal. Ed. Code 47605(b)(5)(G)
Colorado	Application must describe the school's enrollment plan, consistent with non-discrimination policies and legislative intent to provide preference for at-risk students.	C.R.S. 22-30.5-106(1)(l)
DC	Applications are evaluated on whether the school's targeted population is reflective of the district's demographics.	DCPCSB Application
Delaware	• Applications must identify strategies to accommodate at risk students and students with disabilities. Regulations also require applicants to show board experience with diversity issues and require authorizers to consider impact on community.	Del. Code 14-512(7)
Florida	Charter school applications must demonstrate how a racial/ethnic enrollment balance will be achieved.	Fla. Stat. 1002.33(7)(a)(8)
Georgia	• Charter school renewal requires schools to supply information on how enrollment demographics compares to the local district. • Applications must describe steps the charter school will take to ensure equitable access in enrollment. • Application must include a diversity-focused enrollment plan.	GA Model Charter Application GA Rule 160-4-9-.05(2)(g)(4)
Kansas	Applicant must demonstrate a plan for outreach to a broad cross-section of families.	State's Model Application
Maine	Charter school applications must include a plan for identifying and successfully serving students with the wide range of learning needs and styles typically found in noncharter public schools of the sending area.	Me. Stat. 20-A:2406(F)(5)(a)
Massachusetts	• Charter schools must have "recruitment and retention" plans specifically factoring in each demographic category. • A charter school's success at meeting its recruitment and retention plans must be a factor in renewal decisions.	Mass G.L. 71:89(dd) Mass G.L. 71:89(i)(3)
Mississippi	• Authorizers must consider recruitment plan and efforts if schools 'underserved' population is less than 80% of local district's similar enrollment. • Charter school application must include a plan and timeline for outreach and recruitment of low-income, at risk and special education students.	Miss. Code 37-28-23(5) Miss. Code 37-28-15(4)(n)
New York	• Charter schools must demonstrate good faith efforts to attract and retain a comparable or greater enrollment of students with disabilities, English Language Learners, and low-income students when compared to the host district. • Applicants must demonstrate its plan to meet enrollment and retention targets based on local district enrollment demographics.	NY Educ. Code 2854(2) NY Educ. Code 2852(9-a)(b)(i)
North Carolina	• Within first year of operation, charter schools must make efforts for the enrollment of the school to reflect the racial and ethnic composition of the population the charter sets forth.	N.C.G.A. 115C-218.45(e) N.C.G.A. 115C-218:5

State	Descriptions of Statute	Sources
	• Applications are assessed on whether they demonstrate a plan to increase learning opportunities for underserved students.	
Pennsylvania	• Application must describe the school's enrollment policy, consistent with non-discrimination policies and legislative intent to provide preference for at-risk students. • Schools may only give admission preferences to "at-risk" student populations defined as those "at risk of educational failure because of limited English proficiency, poverty, community factors, truancy, academic difficulties or economic disadvantage"	State Model Application Pa. Con. Stat. 17-1723-A(a)(2)
Rohde Island	Charters are required to engage in proactive recruitment in the community to diversify the pool of applicants.	R.I.G.L. 16-77-2.2(10)
South Carolina	Application must describe how charter intends to ensure enrollment will be similar to demographics of local district.	S.C. Code 59-40-60(F)(9)
Texas	Renewal petitions must include targeted/anticipated enrollment demographics as well as the comparable demographics of the local district.	Tex. Ed. Code 12.1181
Washington	Application must include a description of "culturally inclusive student marketing and recruitment."	State Model Application
Wisconsin	Application and contract must articulate means by which school will achieve racial balance reflective of district population.	Wisc. Stat. 118.40(1m)(b)(9)

Appendix C: Charter Schools Entry and TPS Total Revenues

Table C.1 Charter Schools and Per Pupil Total Revenues for Traditional Public Schools

	DV: Total Revenue Per Pupil					
	Full Sample		CEM Sample		PSM Sample	
	(1)	(2)	(3)	(4)	(5)	(6)
For-profit Charter x Post	-0.058***	-0.022**	-0.057***	-0.030**	-0.049*	-0.032*
	(0.010)	(0.008)	(0.017)	(0.011)	(0.019)	(0.016)
Non-profit Charter x Post	-0.005	0.011**	-0.002	0.011**	-0.004	0.007+
	(0.004)	(0.003)	(0.005)	(0.004)	(0.005)	(0.004)
Num.Obs.	142548	142548	93765	93765	79122	79122
R2	0.918	0.934	0.908	0.929	0.905	0.926
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
District Fixed Effect	Yes	Yes	Yes	Yes	Yes	Yes
State x Year Fixed Effect		Yes		Yes		Yes
Year Fixed Effect	Yes		Yes		Yes	

+ p < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001, Notes: 1) Robust standard errors clustered at the school district level are shown in parentheses, 2) The same control variables as in Table 2 are included in all models.